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RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
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DIESEL RAILWAY TRACTION SUPPLEMENT

The September issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, will be ready on September 1, price 1s.

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:

Mondays to Fridays 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that we are no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Argentine Railways' Closer Working

IT was announced last week that in furtherance of their policy of closer working and co-ordination between the British-owned broad-gauge railways in Argentina, the boards of the major companies had made an interchange of directors. Mr. J. M. Eddy, who is Chairman of both the Buenos Ayres Western Railway Limited, and the Buenos Ayres Great Southern Railway Co. Ltd., and a director of the Buenos Ayres & Pacific Railway Co. Ltd., has joined the board of the Central Argentine Railway Limited. Lord Forbes, a director of the Central Argentine Railway Limited, has become a director of both the Buenos Ayres Western Railway Limited, and the Buenos Ayres & Pacific Railway Co. Ltd., and Mr. H. C. Drayton, a director of the Buenos Ayres & Pacific Railway Co. Ltd., has joined the boards of the Central Argentine Railway Limited, and Buenos Ayres Great Southern Railway Co. Ltd. The appointments do not involve any increase in directors' fees. The boards of the British-owned Argentine railways have been working in close co-operation for some time on matters of common interest, one of the most important of which at the present time is the refusal of the Argentine Government to sanction increases in rates and tariffs to cover higher operating costs; another is the fact that official remittances by the railways have to be effected at the special exchange rate of 16 pesos to the £, as compared with the official rate of 13.50 pesos to the £.

The Classification of Nothing

The suggestion that railway rate making would be much improved if a scale of charges for the conveyance of nothing were adopted, is made in an article elsewhere in this issue by Mr. Roger Gibb, whose long experience of railway freight classification lends weight to what at first sight might be thought a ridiculous proposition. A little reflection will show that in practice varying rates are already charged for nothing under existing conditions of carriage; Mr. Gibb instances a trader who consigns 4½ tons at the 5-ton rate. In effect, the proposal is to classify "void" weight and apply a mileage scale to it. Then all "void" weight, no matter in respect of what commodity, or mixing of commodities, it arose, would be charged at the same mileage scale. To ensure as good wagon loading as possible this "void" weight obviously should not be made too low. Mr. Gibb's contention is that classification of "void" weight should be a basic part of any new standard charges for railway goods traffic, and that it would simplify rate making, and make reasonable conditions of carriage easier to enforce.

Railway Capital Structures

The high dividends payable on the ordinary share capitals on certain of the French railways and the factors which make this possible are the subject of an editorial article on page 201. The contrast with British railways is striking. In Great Britain a very heavy proportion of net earnings is absorbed first by debentures, and secondly by prior charge securities. It has not been possible for many years for the British railways to raise capital except by the issue of debentures. In the case of the largest of the British lines, the London Midland & Scottish Railway Company, which has capital stock outstanding amounting to £304,600,000, there ranks before this rather more than £109,000,000 of debenture stock. Of the capital stock, £209,400,000, or practically two thirds, is in the form of guaranteed or preference stock. In the division of total net earnings last year, 28 per cent. was absorbed by debenture interest. The appropriations necessary for the service of the guaranteed stock raised that percentage to 38, and when the preference stocks had been dealt with the amounts so absorbed had been brought up to 81 per cent. The remainder had to satisfy the needs of the ordinary stocks and of reserves. In the case of the London & North Eastern Railway Company, debentures absorbed 38½ per cent. of the total net earnings, a figure which was raised to 61 per cent. when the claims of the guaranteed stocks had been met.

Government Goods Carriage

It appears that the Ministry of War Transport, and the controlled undertakings in the Road Haulage Organisation, have received applications for an interpretation of the Conditions of Carriage under which goods are accepted for transport by vehicles in this Government organisation. We do not know which condition, or conditions, is/are mainly at issue, but it would seem that doubts must be fairly widespread, as the Ministry of War Transport has issued an official statement on the matter, which is included in full on page 214. This says that the Conditions of Carriage "are part of the contract between customer and carrier and the determination of the extent of liability of the parties is one for the

Courts. Carriers should, therefore, refer customers making inquiries of this nature to their legal advisers." This seems to us an unwarrantable example of bureaucratic arrogance, such as is feared by many to be a feature of Government trading. While we think there can be no doubt of the legal accuracy of a statement which says, in effect, that a contract once made must be interpreted by the Courts in case of dispute, it seems to us that commercial courtesy and the wartime need to facilitate business and avoid unnecessary friction demand that each party to a contract should be prepared to say what it means. In ordinary business, an inquiry for interpretation would be answered, and the parties would probably find that they understood the doubtful clause in the same way. Alternatively, one would know what the other desired to establish and could examine his legal chance of upsetting such a view. In any event, if the Government Conditions of Carriage admit of real ambiguity, they should be modified forthwith.

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Railway Road Interests in North America

The tabulation published in our issue of July 30 giving details of direct ownership, associated road companies, and co-ordinated workings, as regards the railway road interests in the U.S.A. and Canada, directed attention to the comparatively small numerical strengths of the fleets, compared with the position in Great Britain. It was pointed out that, in all, 5,249 motorbuses and 4,257 motor lorries were owned by, or worked in conjunction with, the North American railways. A reader has since suggested that this is misleading, inasmuch as it ignores the activities of the Railway Express Agency, which is controlled by the leading American railways, and uses a fleet of more than 15,000 motor lorries and vans—the largest motor fleet under one management in the U.S.A. This company maintains 15,000 miles of motor carrier lines, and is engaged in the collection, delivery, and transfer of express traffic, which in itself is a distinctive feature in the transport of the North American Continent. Admittedly, this fleet could properly be added to the total we gave previously, but we felt that to do so would be to invite a misleading comparison, as collection and delivery activities corresponding with those of the British railway companies are somewhat different from actual separate road transport operations maintained in collaboration with railways. At the outbreak of war, the British railways employed some 10,400 motor vehicles mainly on such work, of which 3,946 were mechanical horses.

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Goods Transport Control in Eire

The system of goods transport control and reorganisation, which was introduced experimentally in North Mayo in December last, is already deemed to have proved sufficiently successful to have justified its extension to other areas. Further districts are to be included in the near future and it is likely that the principle of control will be extended gradually to cover the whole of the 26 counties of Eire. Official statements emphasise that these are purely emergency plans for the conservation of petrol and tyres, and the maintenance of a reasonably efficient standard of transport during a period of stress, but, as with all "wartime" control, it is likely that former conditions will never be restored in their entirety. The original Emergency Powers Order made by the Minister for Supplies in respect of North Mayo has been revoked, as the control is now exercised by the control of petrol supplies. This means that the restriction on the use of private commercial goods vehicles fitted with gas-producer plants has been removed and that all such vehicles are now permitted to operate for the owner's private business under the same conditions as apply generally in other parts of Eire. As heretofore, the public goods transport services are being maintained by the Great Southern Railways Company. Many privately-operated vehicles are being immobilised accordingly, and it can scarcely be doubted that private road-transport enterprise of the pre-war order will never be restored in its entirety. (See page) 214.

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Iraqi State Railways

Total receipts of the Iraqi State Railways for the year ended March 31, 1942, showed a considerable increase over those of the preceding year, and amounted to 2,241,657 Iraq dinars, against 953,379 Iraq dinars; and expenditure rose by 639,834 Iraq dinars to 1,440,546 Iraq dinars. The operating ratio was 64.3, against 84. The number of passengers conveyed during the year amounted to 2,565,885, compared with 2,404,620; and the tonnage of goods handled to 1,425,919, against 1,013,478. The Iraqi State Railways are based on the lines constructed by the British Army during the Mesopotamian campaign. These lines were made over to the civil authorities set up by the British Government in 1920, and three years later, to the then newly-formed Government of Iraq; they became the property of the Iraq Government in 1936. The railway system consists of three main sections, based on: (i) the metre-gauge line connecting the port of Basra with Baghdad, with its branches (Shuaibah Junction to Shuaibah and Zubair, Ur Junction to

Nasiriyah, and Hindiyah Junction to Karbala); (ii) the metre-gauge line connecting Baghdad with Kirkuk, with its branch (Juloula Junction to Khanaqin City); and (iii) the section of standard gauge connecting Baghdad with Tel Kotehek, on the Syrian frontier (opened for traffic in July, 1940).

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Size and Order in Industry

In recent issues of *The Sunday Times* three prominent industrialists, all of them closely associated with industries which have achieved a wide measure of cohesion, have contributed articles dealing with the part played in industry by combines. The first was Lord McGowan, Chairman of Imperial Chemical Industries Limited, who showed that far from acting in restraint of trade, large combines had developed new industries and outlets for British labour, had reduced the cost of their products, and had improved the conditions of their employees. Mr. A. C. Macdiarmid, Chairman & Managing Director of Stewarts and Lloyds Limited, agreed with Lord McGowan that cartels were an essential part of the post-war international set-up, and maintained that the case had been made for properly organised and ordered industry; he also said that there were many branches of industry where size was one of the main factors of efficiency and low cost. Sir Felix Pole, Chairman of Associated Electrical Industries Limited, said that if the Atlantic Charter was a guide to general principles, co-operation internationally was essential, and spheres of influence were indicated as between nations. If this was desirable between Governments, why should it be held to be the reverse between industrial concerns? In post-war industry, Sir Felix Pole declared that Government action and aid must be backed by planned organisation and industry, and that trade associations and combines had to play a major part in the future trade of the world.

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Monopolies or State?

Changing world conditions have made the growth of the large industrial unit a natural process. In the days of Victoria and free trade it was the policy of the State to interfere as little as possible with business; then the Post Office was practically the only example of State trading. Advocates of State ownership contend that "big business" has now become so big that the combines have reached a position almost analogous to that of the barons at the time of the signing of Magna Carta. They argue that now that a score or so of large concerns control the iron and steel industry, the electrical industry, transport, the chemical industry, catering, multiple shops, tobacco, and so forth, there will be a diminishing scope for private enterprise in the future, and that such private enterprise as remains will be in effect merely as agents or minions of the large concerns which will control supplies, either directly or indirectly. Therefore, they argue, they would prefer complete State ownership and trading to the present system. We do not put forward this as the view of this journal, but it is a subject likely to provoke much controversy in the near future.

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Steam Distribution

In a paper having the title of this note, delivered by Mr. Walter Smith, of the Pilliod Company, before the United States Northwest Locomotive Association, a very good reason is given for paying more attention to the improvement of cylinder performance even though this should mean a temporary diminution of work on other locomotive problems. It is not because advances in this direction have lagged behind those in other directions or are any easier to irritate but because relatively small advances in this field are worth more than far larger advances in other fields. Mr. Smith states that whereas a boiler will communicate some 75 per cent. of the heat energy in the fuel to the steam generated, the cylinders are normally capable of converting only 8 to 12 per cent. of the energy of the steam into useful work. From this it follows that a gain in cylinder performance of 1 per cent. will save as much fuel as a boiler efficiency improvement of about 8 per cent. Cylinder performance is limited by the second law of thermodynamics and cannot, even in theory, be more than about 20 per cent., but the margin left for such practical improvements as diminution of wire drawing and back pressure is still large.

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Steam Locomotivemen's Pay in the U.S.A.

The recent inquiry in the United States into the pay of diesel enginemenn and the manning of diesel-electric locomotives was not confined to this description of motive power. The men's demand for pay based on the horsepower instead of, as hitherto, on the adhesion weight of their locomotives, applied equally to steam locomotives, and that it was, in reality, a demand for an all-round increase was made clear by President R. B. White, of the Baltimore & Ohio Railroad, who showed that on 108 out of 210 steam passenger locomotives and 969 out of 1,192 steam locomotives owned by the B. & O., which have not been altered

since they were first built, the crews would obtain increased pay in the new conditions demanded. Although the desired change has not been conceded, the emergency board of the National Railway Labour Panel, which has conducted the inquiry, has recommended that certain concessions in pay should be made. As with diesel-electric power, there should be no maximum adhesion weight above which the sliding scale basis of pay cannot rise. Also, in view of the greater efficiency of many of the modern high-pressure steam locomotives, and as the advances in pay are calculated on the basis of 50,000 lb. increments in adhesion weight, it is recommended that 4-8-4 and 2-10-4 locomotives should be classified as in the group with 50,000 lb. higher than their actual adhesion weight, and similarly with any steam locomotives of which the adhesion weight is less than 70 per cent. of the total weight of the engine. It is also recommended that if, with any classes of locomotive, pay rates calculated in accordance with the board's findings should be less than at present, the existing rates should be maintained.

....

An Early A.P.B. Installation Renovated

What has been known ever since its introduction as the "absolute-permissive block" system of automatic signalling for single lines has been in existence about 32 years. The first installations appear to have been made in 1911. In that year the New York, Chicago & St. Louis, or "Nickel Plate" line, made one in Indiana, using a circuit arrangement which did not become popular; the Toronto, Hamilton & Buffalo adopted the stick-relay method so widely used since, and later found outside America. Only one other system, using interlocking relays, achieved any degree of success and then only for a time on the Burlington lines. Doubling reduced the original T.H. & B.R. installation to a $4\frac{1}{2}$ mile stretch, but other sections, installed after 1911, have long been in use. When the apparatus and wiring became due for complete overhaul and renewal, it was recently decided to abandon the original 3-position semaphores, which were of a design that achieved wide favour, and replace them by colour lights, and the work is now complete. The all-primary battery method of power supply, naturally adopted in such a locality in 1911, was converted to the a.c. with primary stand-by method. The designation "absolute-permissive" does not have quite the meaning that English usage would ascribe to it, but it has been retained in the Dominions and is now well established.

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Diameter Speed

The term "diameter speed" is frequently used in the United States by locomotive engineers, but seldom heard in this country. This is the track speed in m.p.h. equal to the driving-wheel diameter in inches. It was once considered to be the maximum useful speed of the locomotive and a simple calculation serves to show that it corresponds to a rotational speed of 336 r.p.m. At the higher speeds commonly attained nowadays special problems arise. For one thing the piston speed, which for a 30 in. stroke as commonly used in America, is normally limited to 1,600 ft. per min., reaches figures at which piston and valve lubrication require particular attention if maintenance troubles are to be avoided. Then again the question of reciprocating balance, always difficult, becomes acutely important; it is necessary to achieve a compromise that ensures steady and safe running at the limiting speed yet obviates the possibility of damage to the track and its supporting structures. Finally, there is difficulty in maintaining the upward trend of horsepower output due to the diminished time available for the entry and escape of steam with each piston stroke.

....

Road and Rail

War conditions often necessitate journeys which at one time would have been considered the limit of inconvenience. The time-table warning, "passengers cross the town at their own expense," was once a deterrent to the choice of routes in connection with which it was uttered. Today we find that many persons think nothing of a walk from station to station if it represents quite a modest gain in the time of arrival at the end of the journey. We have in mind routes such as Aylesbury to Manchester, via L.N.E.R. to Rugby and L.M.S.R. thenceforward, or Aylesbury to Leeds using the same two companies' lines to and from Sheffield. Ingenious passengers, particularly those in the Services, have evolved many others, some of which formerly would have suggested themselves only to the timetable student. But for many today the train provides for only part of the journey, and the rest of the way must be made good by footslogging, the bicycle, or the jerked thumb and interrogatively-raised eyebrows of the hitch-hiker. In short, co-ordination of rail and road transport has become for many a matter of personal planning and energy, and immediate concern, rather than the ideal that it sometimes seemed in peacetime.

Railways and L.C.C. Plan

IN our issue of July 16 we made a reference to the possible reorganisation of railways in the London area which was envisaged in the plan prepared for the London County Council by Mr. J. H. Forshaw, Architect to the L.C.C., in association with Professor Patrick Abercrombie. In the current issue of our monthly contemporary, *Building*, Mr. Julian Leathart, F.R.I.B.A., has contributed an architectural commentary on the plan, in the course of which he states that: "The two greatest elements of frustration to the planners' proposals—the two outstanding non-collaborators in the great work of replanning London—are the main-line railway companies and the Port of London Authority. Both these influential and powerful 'public servants' show an implacable 'hand-off' attitude to any idea which seems to disturb the *status quo* of their respective organisations." He goes on to say: "I gather that tentative requests for co-operation were made to the railway companies, but without response. Whether or not this is a fact, it is clear that the element of uncertainty left in the minds of the L.C.C. planners by the uncompromising attitude of the railways, has 'hamstrung' the rail transport reorganisation section of the new plan, which consequently lacks the vision and clarity of the corresponding proposals of the London Regional Reconstruction Committee."

Mr. Leathart's criticisms seem not only unfair but a little extraordinary in the lack of familiarity they display with published facts. The authors of the plan, for example, have acknowledged the generous assistance which they received in drawing up their projects from a number of organisations, among which the railway companies and the Port of London Authority are specifically mentioned. His statement that tentative requests for co-operation were made to the railways, but without response, we understand, is incorrect. Moreover, as was pointed out in our issue of July 16, the authors of the plan fully appreciated that the railways present a number of difficult features which, from the planners' point of view, merit serious attention, and detailed consideration, and they therefore suggest that a specially-appointed investigating body should be set up before any detailed scheme for dealing with railways is propounded. It was also shown in the same issue that the L.C.C. was not committed to the adoption of the plan, and that it would submit the scheme to the various interested parties, which would include the railway companies, the London Passenger Transport Board, and the Port of London Authority.

Mr. Leathart also declares: "Each of the London termini is an example of how important railheads should not be planned and approached. No station can be reached by rail except by a tedious journey through chasms of sordid ugliness walled in by the backs of London's tenement slums. What the foreigner's first impression of the greatest and wealthiest capital city in the world must be in approaching Euston, Kings Cross, St. Pancras, Liverpool Street, Waterloo, or Victoria is best known to himself. Something more than the cleaning-up process of the vehicular approaches to the termini is necessary; the broom must sweep clean at both ends of the station platforms, and for a long distance in each direction. In fact, it would be better if the L.C.C. proposals swept away the mess with greater vigour and thoroughness in the manner shown by the L.R.R.C., and the termini scrapped and regrouped on new sites with clean fair approaches. An opportunity would thus be created for improving the faces of the stations, which at present consist of the fake Gothic of St. Pancras, the monumental absurdities of Victoria and Waterloo, and, with the exception of Kings Cross, the nondescript Victorian tripe of the remainder. As long as railway companies remained smugly satisfied with the present arrangement, there is no hope of improvement."

The substance of Mr. Leathart's criticism would appear to be that the railway companies were not willing to agree to the planning proposals in advance. To us this seems a very reasonable attitude, more especially as in the foreword to the plan, Lord Latham stated that only when the council had obtained the views of all the interests concerned would the L.C.C. itself be able to decide on the principles and projects of the plan. In this connection, it should not be overlooked that throughout the plan no figure of costs, or, indeed, of the financial aspect of these schemes, was given, and the railway companies, as commercial undertakings, could scarcely be expected to commit themselves to a plan which, to put it bluntly, at the present time is nebulous in the extreme.

The authors of the plan themselves pointed out that schemes which include the removal of large, or even small, sections of the existing railway structures cannot be undertaken without engineering difficulties and high expenditure, and it is clear that the railway proposals in the plan, taken generally, would involve a vast expenditure, as to the extent of which it is impossible

even to hazard a guess. The Chairman of the L.C.C. Finance Committee has gone so far as to state without hesitation that the existing resources of the council would be quite inadequate to finance the plan with only the degree of assistance from the national Exchequer which used to be allowed towards essential projects before the war.

The railway companies were not responsible for the erection of London's tenement slums which back on to their lines and, indeed, their scope for certain widenings and improvements which have been put forward from time to time has been greatly limited by the intensive building which has taken place close up to their track. When it is also suggested that the present termini should be scrapped and regrouped on new sites with clean, fair approaches, he is obviously touching a matter in which many other bodies than the railways are concerned. The problem which thence arises in relation to projects of this sort is, therefore, not something that can be decided by the railway companies, and, in present circumstances, even if Mr. Leathart's criticisms were justified in this matter, it is futile to reproach the railways.

Transport and Catering Policy

IN previous articles* relating to the arrangements for public transport after the war we have shown that certain fundamental conclusions emerge. First, whoever owns the capital, whether it be the State or private persons, should control the management, and there is no half-way house such as the advocates of the public utility type of organisation are suggesting. Second, the problem is not any more a railway problem or a road, canal, docks, or air problem, but a *transport* problem; only if transport is looked at as a whole will a satisfactory solution in the public interest be found. Third, there are special features about public transport—its road-way, its peaks, and the fact that it sells not manufactured articles but services—that put it in a category apart from ordinary business.

We propose, now, before dealing with the all-important question of the maintenance of efficiency, to discuss another aspect which will have an important effect on transport after the war, namely catering. The railways are probably the world's largest caterers. They own 53 hotels, over 300 refreshment rooms, and in normal circumstances provided 910 restaurant-car services. It is estimated that in peacetime they supply refreshments to over 150,000,000 customers a year and their annual gross receipts from this source are over £6 million. Their catering service is a business ancillary to the main one of public transport, but the two are closely interlocked. There are likely to be vast changes in the catering business after the war, and it is necessary that transport should be ready to play its part. The peak problem is also connected with the matter, as also is the problem of employment, now occupying so much attention. The more effective is the inter-working of the different forms of transport, the better the service that can be provided.

Few people would be prepared to say that there is not scope for improvement in the railway refreshment rooms. They can be made much more attractive, both in design and service. On the train itself it is probable that improved methods will be forthcoming and the service extended. Some of the hotels are of the highest order and it is probable that after the war the big demand will be for a more popular system. Whether this should be in addition to the present type of hotels is a question that will need careful consideration. But the big field for new development will undoubtedly be in holiday and tourist catering, and it is with this aspect that we are here mainly concerned.

When Mr. Ernest Bevin was introducing the Catering Wages Bill in the House of Commons on February 9 last he made some very interesting observations on the matter which may be summarised thus: (1) After the war hundreds of millions a year will be spent by the nation on organised leisure by reason of shorter working hours and holidays with pay; (2) new methods of spending that leisure require to be studied now; (3) the staggering of holidays needs to be considered afresh, so that peaks can be avoided; (4) tourist traffic from overseas is capable of great development. Now if there is to be this tremendous increase in holiday travel, it is obvious that the transport system will need to be planned to meet it. It is not, of course, a new thing. The railways, for example, have done much in the past to cater for such traffic. Their policy was to attract to the railways the greatest possible volume of traffic by means of cheap-fare arrangements that did not unduly affect normal receipts. These cheap-fare facilities were numerous and were introduced from time to time to meet various types of travel, but by far the greater part was by monthly-return tickets and

day, half-day, and evening return tickets issued under general arrangements or for special events. Guaranteed excursions arranged for works and other organisations had a growing popularity and were made more attractive by providing meals on trains. Additional and faster trains were provided and the passenger amenities were greatly extended by improved tracks and carriages. A serious problem after the war will be the provision of carriages and buses. The stock will be in a very bad condition, and unless steps can be taken before the war ends to renew it, the situation may be serious. It is a matter requiring urgent Government attention, and there are great difficulties involved.

Before the war, peaks were already a problem, as we saw in a previous article. It was not always possible to avoid overcrowding at times of maximum demand, when all transport facilities were equally congested, and the difficulties of the railways, which could not be entirely overcome on an economic basis, were accentuated by prevailing business conditions, and also by the habits of the travelling public in concentrating the bulk of their holiday travel in two or three weeks of the year. If after the war there is to be such an increase in holiday and leisure travel as is foreshadowed by Mr. Bevin, it is clear that far greater efforts than have been made in the past to stagger holidays will be needed.

The experience in London during the war may be of some assistance. Because of the need to secure the utmost economy in fuel, manpower, and vehicles, negotiations began early in 1941 to secure a more even spread of the peak-hour traffic in the London area by staggering working hours. A number of local transport groups were set up, which included representatives of employees, employers and the public transport agencies, and they settled schemes to redistribute the traffic movement as evenly as possible. They worked on the principle of advancing starting times rather than retarding them, so that the corresponding earlier finishing times enabled the greater number of workpeople to return home before dark. Whether such arrangements suitably adapted for post-war needs could be extended to the rest of the country and to different types of travel is worthy of consideration, and no doubt the new Catering Commission will study this London project when it examines the matter. It is possible, too, that closer interworking between the passenger transport interests will help to deal with the increased holiday traffic more efficiently. For example, if there were a common basis of passenger fares for rail and road there could be a much more extended system of inter-availability of tickets and a more economical user of facilities. The aim would be to provide a service that would go far to outweigh the advantages of the private car or the private aircraft, and this ought to be the objective of all engaged in public passenger transport. Fares lower than the standard could be given to attract traffic but would be related not to arbitrary periods of the day but to the securing of economic loading in off-peak periods and lessening of the loading in peak periods.

The possibilities of holiday camps are also very great and their siting is of great importance from a transport point of view. In this country the few holiday camps there are, are on the coast, and coastal places in the holiday season are usually crowded and the transport services congested. There seems no reason why camps should not be situated inland and artificial bathing facilities provided. Holiday camps have been extensively developed abroad and many of them placed inland. Their popularity has been enormously increased, particularly in countries like Denmark, by holidays with pay, and in the recent House of Commons debate one member estimated that after the war in Great Britain the extension of holidays with pay would throw an additional £100,000,000 a year on to the catering industry. The first holiday camp in this country was started about 30 years ago in the Isle of Man; after the last war the camp idea for holidays received a great impetus from the war experience, but the camps were far from being attractive. The camps at Gorleston-on-Sea and Prestatyn were later developments and these were properly designed under architectural supervision.

It is important to appreciate that a holiday camp has a definite function which is to provide an open air, free, and somewhat spartan life with its essential leadership and community spirit; it is a different thing entirely from a hotel service and the two should not be confused. It is likely that after this war, as after the last, the demand for the holiday camp will be great and that much of the organised leisure referred to by Mr. Bevin will find its outlet in this direction. There is great scope for the development of holiday camps, and the factor of transport is important. Whether public transport should own them is a moot point; it can be argued that the promotion of such holiday facilities on a large scale is not the function of transport, but that the transport undertakings would be intimately concerned in their development there can be no doubt.

Tourist traffic from overseas can also be influenced by trans-

* "The Future of Transport," June 18; "The Problem of the Peaks," July 9; "Transport and its Track," July 23; "Transport and Full Employment," August 20

port and it certainly has an important effect on transport income. Before the war the bulk of the tourists went to the Continent. In the debate on the Catering Bill in the House of Lords, Lord Liffé gave some interesting figures. He said that about 1,900,000 tourists visited France each year before the war and some 1,200,000 visited Germany, but Great Britain secured only 600,000, of whom 200,000 were British people coming from various parts of the Empire. In France in 1929 the expenditure by tourists from abroad reached £100,000,000, compared with £22,000,000 in this country. The great number, and diversity of incomes and inclinations, of potential tourists, would appear to offer great scope for the maintenance and development of the first class hotels that are now provided by the railways, as well as for the extension of more popular facilities. As Mr. Bevin said: "Britain has something to sell. She is war-scarred. None of us can meet people from overseas without recognising that the ordinary British folk are people they want to meet. They want to see the people who stood up to it. Why should they not? I believe there is a magnet of attraction in this country, but it has to be organised, facilities have to be developed, and who knows how much it can contribute to peace if others know us better than they now do?" If we can compete for tourist traffic on a larger scale than hitherto, it is obviously to the interest of public transport that it should render every possible assistance, and the railways in particular can bring considerable experience to bear. In conclusion, the working out of all of these ideas affecting the catering industry and public transport will naturally stimulate employment in the country, which will benefit everyone, including transport. As Mr. Bevin so succinctly put it—"Man cannot live by Beveridge alone."

The U.S.A. Accident Situation

ONCE yearly the Interstate Commerce Commission of the U.S.A. publishes a statistical return dealing with railway accidents, analogous in many respects to that issued in Great Britain over the signature of the Chief Inspecting Officer of Railways. The entirely different system of classifying accidents, however, makes direct comparison impossible; in addition, the report does not cover all railways in the country, as many, for various reasons, do not come under the Interstate Commerce Act, but are subject only to laws operative in a single state, if we understand the position rightly. The report for 1941, which is now available, as usual states that it refers to steam railways; but this presumably covers main-line railways generally, as some companies which have considerable mileages electrified are included in the tables of names; and no provision appears to have been made for the separation of accidents concerning electric and steam trains, respectively. Nevertheless, the report of course enables a reliable general picture to be obtained; trends are the important factors and, so long as they can be deduced from such a document, the latter serves its main purpose at least so far as foreign readers are concerned. The conditions of operation on many American lines are so different that the enforcement of some of the safety measures universally accepted in this country cannot be expected. On others, as is well known, full equipment is often provided and a number of lines admittedly enjoy a safety record second to none. It has to be remembered also that the rules concerning the reporting of accidents differ from those obtaining in Great Britain.

In 1941, 5,086 persons were killed and 37,811 were injured on the lines covered by the report; the figure for fatalities shows an increase of 10.28 per cent. over 1940, nearly the same percentage increase, 10.87, as in the number of train-miles, the total for which was 969,000,000—making a fatality rate of 5.25 to one million train-miles. This compared favourably with the average for the previous ten years. The injuries increased, however, by 27.78 per cent., to 39 in every million train-miles, a higher rate than for the previous three years. Broadly speaking, the trend in casualties continues to follow the train-mileage variations, but there have been, as in this country, good and bad years; there was a heavy fall in fatal casualties for some unexplained reason between 1936 and 1940. A table, which gives the distribution of casualties by types of accidents, shows that the highest figures were caused by accidents at level crossings and to persons who were struck or run over at other points.

Over 3,600 train accidents in 1941 were attributed to defects of some kind, and over 4,000 to negligence. Out of the total of 5,086 deaths, only 161 were caused by collisions or derailments. Level-crossing fatalities formed the highest percentage of the total (35.5); it is understood that trespassers, but not suicides, are included in the latter figures. Passenger fatalities in train accidents fell to 18 from the 1940 figure of 66, the highest since 1930. It is of interest to note that in 1932 and in 1935 only one passenger was killed in each year. In train-service and miscellaneous accidents, 25 fatalities occurred, which is again a low figure, as the passenger-miles were 29,360 million. The injuries

to passengers amounted to 3,781. The increase in casualties to employees, both fatal and non-fatal, was approximately 40 per cent., but man-hours only increased by 14.5 per cent. It appears also that the number of accidents leading to disability over more than three days has grown. The distribution table shows that 749 employees on duty were killed and 25,265 injured. Of the fatalities, only 98 were caused by collisions or derailments; and, of the injuries, only 573 were so caused. Fatalities and injuries caused in coupling vehicles amounted to 25 and 486 respectively; the highest figures in the table appertain to persons getting on and off vehicles, presumably in motion, and miscellaneous causes.

An important section of the report covers level-crossing accidents, which, in over 90 per cent. of cases, involved motor vehicles. The fatalities in these accidents amounted to 4.23 per cent. of the total number of persons killed in motor-vehicle accidents in the United States in 1941. Deaths and injuries at crossings came to 1,931 and 4,885, respectively; of the deaths, 1,691 were connected with motor vehicles. No passenger in a train was killed as a result of any crossing accident; and, indeed, since 1930 such an event has occurred only in one year, 1932, in which one passenger lost his life, but in which 17 were injured. Ten employees, including crossing watchmen, lost their lives. Damage to railway property was estimated at nearly \$400,000. Of the 4,320 accidents reported by the railways, 1,908 involved a train running into a road vehicle, and 1,127 were caused by such a vehicle being driven into the side of a train. Twelve buses were run down, and 2 were driven into trains; in 30 cases a pedestrian is described as having "run into the side of a train." The great majority of crossing accidents involved private motorcars and the conclusion is that their drivers are more prone to carelessness and inattention than those of public-service vehicles.

On the whole, there does not seem to be very much difference between the trends in America and in this country. The safety of the railways is gradually improving, and negligence and want of care play as great a part in the U.S.A. as elsewhere. This seems the conclusion to be drawn from the Interstate Commerce Commission's somewhat voluminous tables, in spite of certain difficulties in interpreting figures relating to conditions which admittedly vary somewhat at times from those found on the British railways.

French Railway Dividends

RECENT dividend announcements by French railway companies on their ordinary share capital might well give rise to feelings of envy among holders of British railway ordinary stocks unless the special conditions attaching to French railways were borne in mind. These French dividends are undoubtedly high in themselves, namely, 17½ per cent. for the Compagnie du Chemin de fer du Nord, 14.8 per cent. for the Compagnie des Chemins de fer Paris-Lyon-Méditerranée, 11 per cent. for the Compagnie des Chemins de fer du Midi, and 8.4 per cent. for the Compagnie des Chemins de fer de l'Est. For the Paris-Orleans distribution no information is available later than for 1939, when the payment was fr. 64 on each fr. 500 share. The ordinary capital, however, on which these payments are made represents a very small proportion of the financial structure as funds beyond those provided by the original issue of shares in almost all cases have been procured by the issue of debentures. The respective share capitals, for instance, on which the above-mentioned dividends are paid are only fr. 210,000,000 for the Nord, fr. 400,000,000 for the P.L.M., fr. 125,000,000 for the Midi, fr. 292,000,000 for the Est, and fr. 300,000,000 for the Orleans. In terms of sterling before the devaluation of the franc in 1926 these amounts would have represented approximately £8,400,000 for the Nord, £16,000,000 for the P.L.M., £5,000,000 for the Midi, £11,680,000 for the Est, and £12,000,000 for the Orleans. (By way of comparison, the ordinary share capital of the L.M.S.R. is £95,202,000 and of the G.W.R. £42,929,700.) A large proportion of these dividends is guaranteed by the State; the respective guarantees are: 13½ per cent. for the Nord, 11 per cent. for the P.L.M., 10 per cent. for the Midi, 7.1 per cent. for the Est, and 11½ per cent. for the Orleans.

Since January 1, 1938, as a result of the Decree of August 31, 1937, these companies have not been responsible for the upkeep, development, and working of the lines, as their assets, exclusive of the resources represented by the private property which they had acquired, have been transferred to the Société Nationale des Chemins de fer Français (S.N.C.F.) with which had also been incorporated the former State and Alsace-Lorraine systems. The companies continue to have separate existences as holding companies for the purpose of conserving until 1955 (the average date when their original concessions were due to expire) their private property rights as distinct from their rights under concessions and for the distribution of dividends. The Decree of 1937 preserves the State guarantees, etc., provided for under earlier conventions.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

"Luggage on the Roof"

Essex House, Essex Street,
Strand, W.C.2. August 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The Eastern Counties Railway's Book of Rules (1857 Edition) gives it as one of the duties of guards on passenger trains to see "that the luggage is properly placed and protected." A study of rule books to see when a rule of this description, obviously directed to roof-carried luggage, dropped out might prove a useful indication of when the practice in question became obsolete.

In your British Railway Centenary Number (June 22, 1925), page 116 is devoted to passenger carriage design on the Midland Railway from 1838 to 1874, and shows luggage guard-rails on the roof in first and second class carriages of 1867, but that this feature does not appear in the composite carriage of 1874.

In "The Jubilee of the Railway News" (1914) special number, at page 15 it is stated that the system of carrying luggage on the roof "was continued on some lines as late as the 'seventies," which is not very long after luggage rails were incorporated in the Midland's latest carriage design.

Yours faithfully,

KENNETH BROWN

Railway Coaling Plants

8, Lampton Avenue, Hounslow,
Middlesex. August 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Reading with great interest the excellent series of articles in *The Railway Gazette* on "Coaling Plants," I have been struck again by the amount of time, ingenuity, and expense which has been given to this phase of railway work. But why have coaling plants? Is such a complex and costly device really necessary? Obviously, some machinery for coaling engines is essential, but plants of the kind described would appear to the lay mind to have a number of disadvantages:

(1) They must be comparatively few in number, justified only at large locomotive depots.

(2) They are immobile. The locomotive has to go to the coal, not the coal to the locomotive, which precludes replenishing the tender during a long run, and in turn leads to a large tender, and an additional deadweight for the engine to draw.

(3) Cost.

(4) Breakage of coal due to the fall into the hoppers. The attention paid to anti-breakage devices is evidence of the importance of this defect.

An alternative suggests itself in the application of the container system. Suppose the coal is loaded at the pit head into 4-ton containers fitted with bottom discharge doors, and designed to fit snugly on to a wagon chassis holding, say, three containers. In use, such a wagon would be attached to a self-propelled mobile crane capable of lifting any one of the containers and discharging its contents directly into the tender.

It would thus be possible to achieve the utmost mobility, for trains of locomotive coal containers could be held at all traffic focal points, and recharging the tenders could be carried out in many cases while the locomotives were taking water. Most of our larger stations (and some of the smaller) have bay roads adjacent to the main lines in the neighbourhood of the water columns which would offer suitable operating points, provided the crane jib was long enough to span an intervening platform if necessary. In freight working, the mobility should be equally valuable.

The advantages of the system may be summarised as:

(1) Flexibility of operation.

(2) Cost, which would appear to be considerably less than that involved in the construction of large plants, and would include a saving in deadweight haulage, and engine time spent in travelling to and from coaling plants.

(3) Less breakage. The containers would be lowered well into the tenders, thus minimising the length of coal drop.

(4) The cranes could be used on general freight work when not engaged in coal handling.

A disadvantage may be considered: the fact that coal could be delivered only in, say, 4-ton lots, but except in the case of the smaller tank engines, few tenders have a capacity lower than this, and a standardisation of tender coal capacities in multiples of 4 tons would automatically follow for future building.

Finally, it would be easily possible for different grades of coal to be delivered if required, and such grading need not be limited to two, which seems to represent the maximum aimed at in even the most advanced of the plants described.

Yours faithfully,

C. L. LINDLEY

Publications Received

The Stock Exchange Official Year Book, 1943. London: Thomas Skinner & Co. (Publishers) Ltd., Gresham House, Old Broad Street, E.C.2. 10 in. x 7½ in. x 4 in. 3,127 pp. Price £4 net. Including postage (British Isles), £4 1s. 6d.; (Europe) £4 3s. 9d.; (U.S.A. and Canada, duty paid) \$25; elsewhere £4 5s. 6d.—The 1943 edition of this invaluable work of reference makes its fourth appearance during the period of the war and conditions have continued to be highly unfavourable. Yet the main features and scope of the publication have been retained so far as the Paper Control and the demands of the censorship have allowed, and the price remains the same as that of the previous edition. It contains all available information as to securities throughout the world which the investor may be expected to require. The section comprising "Public Boards" deals with the London Passenger Transport Board, the Port of London Authority, and the Railway Clearing House. In the section "Railways—Great Britain and Northern Ireland" will be found particulars of the amalgamated and absorbed railway undertakings and of the investments in other transport undertakings of the four main-line companies, and of their financial results for the past ten years, although these results during the period of control, are, of course, limited by Government regulations. This section also gives a concise summary of the terms of the railway control agreements. Among "Indian Railways" will be found data as to contracts with the Secretary of State, as to recent purchases of railways,

and as to annuities payable for railways previously acquired. The list of emergency addresses is another useful feature retained in the supplement, which as usual contains information received too late for insertion in the appropriate section.

Alloy Steels.—Leaflet B.S. 970B, superseding B.S. 970A, from the British Standards Institution is a memorandum to consumers and producers regarding the standardisation of alloy steels with the object of alloy conservation. It is intended to serve as a guide to designers who should, in every case, use only such steel as is really needed to give the strength and properties required, preferring wherever practicable a low alloy or even a plain carbon steel to relatively scarce high-grade materials. A distinction between "permitted" and "non-permitted" alloy steels is made and explained; also the part played by the Ministry of Supply in regulating the use of steel is outlined for the convenience of engineers desiring to obtain allocations thereof.

Glossary of Terms used in Electrical Engineering.—London: British Standards Institution, 28, Victoria Street, S.W.1. 8½ in. x 5½ in. Price 2s. each part. Part 7 of this work has now been issued and contains section 9, lightning and surge phenomena; section 10, miscellaneous applications (including lifts, welding, X-rays, electromedical terms); Addenda, and Appendix, Symbols. The addenda consist of one in section 1, general; thirteen in section 2, machines and transformers; and four in section 4, meters and measuring instruments. The appendix shows the symbols for quantities and units defined

in the glossary. Part 8, which is yet to come, will consist of the alphabetical index to all the sections.

Machine Tool Control Reference Book.

—The primary object of this handbook is to enable those concerned in the production and acquisition of machine tools, cutting tools, jigs, measuring instruments, and related equipment, and in the production and acquisition of industrial electrical equipment, to have before them in compact form a summary of the scope and duties of the Machine Tool Control. It is also intended as a general guide to the rules which have necessarily to be followed in relation to the production of these products, and their acquisition and use, in order to ensure that the manpower required to produce them and to operate them is used to the best advantage in the prosecution of the war. The book is not for broadcast distribution but copies will be sent to those who can show immediate need for the information given.

Electrical Research.—A report from the Institution of Electrical Engineers entitled "The Organisation of Post-war Electrical Research" proposes the formation of a "British Electrical Research Board" to consist of scientific representatives of industry and also of bodies maintaining their own research organisations; for example, the B.B.C., the Central Electricity Board, and the G.P.O. It is assumed that post-war industry will be established on co-operative lines rather than be resumed on a highly competitive basis. In the latter eventuality there would be small scope for the reorganisation of research.

The Scrap Heap

In our August 6 issue we reprinted some verses entitled "Ten Little Bureaucrats," showing the manner in which the bureaucracy has developed during the war. A correspondent has sent us the following parody, in an endeavour to show how the process may be reversed later:—

TEN LITTLE BUREAUCRATS (IN REVERSE)
(With apologies to the Toronto "Saturday Night")

Ten little bureaucrats squabbled o'er the dame,
They pushed her off the pay list and then there were "nane."
The Treasurer had been her beau, and hoped to be her mate,
So he resumed his peacetime job and then there were eight.
The "Rubber Stamp" was also piqued, in her he'd lost his heaven,
He went back to his "bucket shop" and then there were seven.
Seven little bureaucrats, the Padre'd naught to "fix,"
So he threw in his hand at this, and then there were six.
Six little bureaucrats, more dead than alive,
One fell off his office stool and then there were five.
Five little bureaucrats, the last one asked for more,
They said he wasn't worth his keep, and then there were four.
Four little bureaucrats, the lawyer got no fee,
So angled for another job and then there were three.
Three little bureaucrats, a Colonel with nose blue,
Said, "One can't drink in comfort heah," and then there were two.
Two little bureaucrats, since the eight had gone,
Disagreed most heartily and then there was one.
One little bureaucrat sitting by himself,
Said "I am going to hop it where I will get more pelf."
No little bureaucrats left from half a score,
The owners got the "biz" again and it ran as ne'er before.

E. G. G.

THE SUPER SNOB

A recent newspaper article on the evils of snobbery uttered the solemn warning that "there are still first-class carriages." This was reinforced by a sketch of an evidently prosperous but evilly-disposed person, seen through a compartment window on which was boldly displayed the damning figure "One." No doubt was left in the beholder's mind that by whatever methods the character portrayed had raised the money necessary for the higher fare, they were dishonest. He corresponded closely, in fact, to the traditional portrait of the black-marketeer, and we were sorry to see that in a final fling against opulence the artist had placed between his lips a large cigar—an indulgence which should by this time surely be accepted as representative of the best in the British character. Although the spirit of Victorian melodrama is now derided, it seems that the public must still have its villains, even though wartime austerity leaves them few dissipations more serious than that of riding in first-class carriages.

B. K. C.

SEMINARY LOCOMOTIVES

The Great Western's connection with the Church is an old and interesting one. The Christian era began in earnest in 1903, when ten engines were named after cities; it was a brilliant start, for *City of Tyro* attained 100 m.p.h. in 1904, and is now preserved in the museum at York. In 1906 came twenty "Saints" a curious selection including *Saint Andrew*, *Saint Benedict*, *Saint Gabriel*, *Saint Sebastian* and *Saint Vincent*. In the same class are to be found *Lady Macbeth* and *Bride of Lammermoor*!

In 1922 came ten "Abbeys," including *Tintern Abbey*, *Llanthony Abbey* and *Westminster Abbey*, company of which is shared by *Knight Templar*, *Knight of St. John*, *Knight of the Grand Cross*, and *Knight of St. Patrick*. The "Hall" class of 1928 got well off the mark, for the first was *Saint Martin*, converted by having smaller wheels. Besides *Kelham Hall* and *Wycliffe Hall*, others with an ecclesiastical twist are *Saint Brides Hall*, *Ripon Hall*, *Campion Hall*, *Saint Benet's Hall* and *Saint Edmund Hall*. The company lives up well to the inscription below its coat of arms: "Domine Dirige Nos Virtute et Industria." The other railway companies are disappointing in comparison. First in order of merit comes the Southern with *King*

Arthur and his knights, and several good Church schools. The L.M.S.R. seems to prefer famous regiments, and the L.N.E.R., racehorses. But each has bagged a brace of saints for the sake of appearances. *St. Helena* and *St. Dunstan's* and *St. Frusquin* and *St. Gatien*.—From "The Church Times."

CHATEAU FRONTENAC

When, in the 1890's, Sir William van Horne, President of the Canadian Pacific Railway, had the idea of building at Quebec "the most talked about hotel on the North American continent," he probably did not imagine that in August, 1943, the realisation of his idea would be the most talked about hotel in the world. The Chateau Frontenac, the scene of the conference between Mr. Churchill, President Roosevelt, and Mr. Mackenzie King, was opened in 1893. Built in sixteenth-century French chateau style, on the site of the former Chateau St. Louis, the home of the governors during the French and early English colonial régime, the Chateau Frontenac has a most commanding position overlooking the St. Lawrence River and the city. Beside it, on the skyline, looking from the river, is the Citadel which crowns the Heights of Abraham. The Chateau Frontenac has been five times enlarged and improved since its opening. There are 725 guest rooms and many public rooms, notably the Salle des Fêtes, the ballroom, and the convention hall in which the conferences are being held. It can hold 900 people, and has a gallery for 127 more.—From the "Glasgow Herald."

Arrangements have been made for the equitable distribution of the alarm clocks which are being imported from Canada and the United States. Priority is to be given to railway, and to passenger road-transport, employees, who, it appears, will find punctual rising an expensive habit, as the clocks cost 16s. 9d. each.

THE 3.46 BAGS A HARE

A hare's dash for safety along the lines in Market Rasen (Lincs.) Station recently caused excitement among passengers on the crowded platform but ended badly for the hare. As the 3.46 p.m. to Lincoln drew up the animal was seen to run the length of the train. It was headed back and on its return was pelted from the platform. The engine-driver jumped on to the line and killed it with a stick.—From the "News-Chronicle."

TAILPIECE

("Each of the London termini is an example of how important railheads should not be planned and approached. No station can be reached by rail except by a tedious journey through chasms of sordid ugliness walled in by the backs of London's tenement slums.")—Julian Leathart, F.R.I.B.A.)

The rolling roads of England are disfigured here and there.

By ribbon-like development extremely hard to bear.

By bungalowoid excrescences that violate the codes.

But is it fair to blame the men who made the rolling roads?

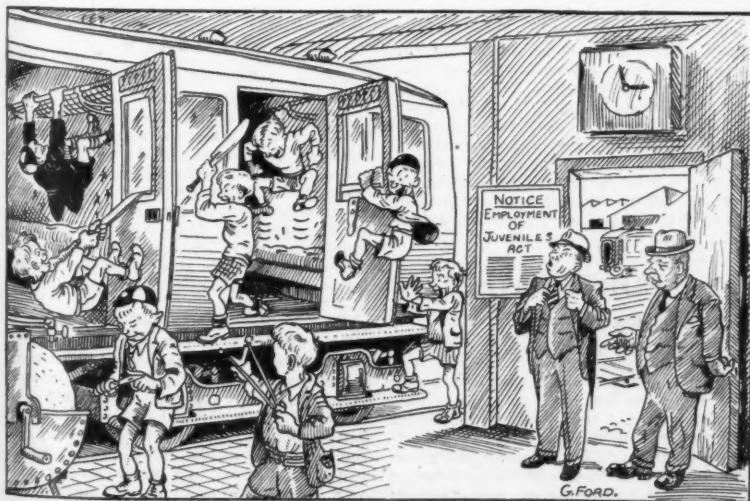
The rail approach to London is not always neat and clean;

There are nicer routes of entry than via Bethnal Green.

But the men who planned the railways, did they plan the squalor too?

Come off it, Mr. Leathart! O do come off it. do!

E. C.



"——— and this is our coachwork testing shop"

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

WESTERN AUSTRALIA

Washaways and Storms

In recent months storms and heavy rains have occurred, causing damage to permanent way. During March a cyclone, accompanied by high-velocity gales and torrential downpours, swept over the Port Hedland district, where approximately 12 in. of rain was recorded in 24 hr., resulting in damage to permanent way, telephone lines, and buildings. A cyclonic disturbance also caused considerable harm to telephone poles and wires, and to buildings, on the main railway system; the damage was particularly severe in respect of the telephone and telegraph services. Temporary repairs were effected quickly, and all services restored to normal with a minimum of delay and inconvenience to the general public.

UNITED STATES

New Motive Power

The Baltimore & Ohio Railroad has applied to the Interstate Commerce Commission for authority to assume liability for \$33,500,000 of equipment trust certificates, a considerable proportion of which is to be devoted to new motive power. The locomotives contemplated are three 5,400 b.h.p. diesel-electric freight locomotives; fifteen 1,000 b.h.p. diesel-electric shunting locomotives; and twenty articulated steam freight locomotives; and 965 composite-type 50-ton bogie hopper-wagons are to be acquired.

The Northern Pacific Railway stud of 4-6-6-4 steam locomotives of Schenectady build (the American Locomotive Company) has been increased, by the recent delivery of twelve, to forty. These powerful engines have each four 23 in. x 32 in. cylinders; 5 ft. 10 in. driving wheels; 260 lb. per sq. in. pressure; and a tractive effort of 106,900 lb.; and weigh in running trim 287½ tons, of which 196½ tons is available for adhesion. Their tenders are of the latest 14-wheel type, accommodating 27 tons of coal and 25,000 gal. of water.

Seaboard C.T.C. Installation

Considerable benefit has been derived from the recent installation by the Seaboard Air Line Railway of centralised traffic-control over 64½ miles of single-track main line between Savannah and Thalmann, Georgia. North of Savannah the Seaboard has alternative routes, one, *via* Charleston, used primarily for freight, and the other, *via* Columbia, principally for passenger service. Similarly, alternative routes are available from Gross, Florida, 107 miles south of Savannah; and the Savannah-Gross section is therefore a bottleneck from the operating point of view.

It is on the Savannah-Thalmann section that most of the meeting of trains on the single line is scheduled, and this section has been chosen for the C.T.C. installation. Every day twelve scheduled passenger trains, including diesel-hauled streamliners, pass over this section, together with four or more extra sections, and from 20 to 24 freight trains; so that 40 or more train movements, with a number of meets, may have to be handled daily; there are also four level crossings with other companies' lines. Nevertheless, it has been found possible to reduce the passing tracks from 19 to 16, cutting out those at Ford, Pine-land, and Anderson.

With two exceptions, the other passing loops have been lengthened to make them capable of taking trains of 90 to 95 bogie wagons, and No. 16 turnouts have been substituted for the previous No. 10 turnouts, to permit of higher speeds into and out of the loops, by which means it is estimated that a heavy freight train may save from 12 to 15 min. from leaving one loop to stopping in another. By careful control of meeting arrangements, however, many such stops have been eliminated, and a general average of 10 to 12 min. is being economised by all trains passing through this territory, over which 16 trains at times are in operation simultaneously. Speed limits are 75 m.p.h. for diesel-hauled passenger trains; 70 m.p.h. for steam-hauled passenger trains; and 50 m.p.h. for freight trains.

C.T.C. on the Santa Fe

An order has been placed by the Atchison, Topeka & Santa Fe Railway System with the Union Switch & Signal Company for the installation of centralised traffic-control over 42 miles of its Pecos division between Mountainair and Belen, New Mexico. A style "C" control machine, located at Mountainair, will control the whole territory. Signals will be of the searchlight type; hand-thrown switches, electrically locked, will be provided; and the loops will be track-circuited and signalled for movement in either direction.

ARGENTINA

Record Cotton Crop

The second forecast of this year's Argentine cotton crop issued by the Ministry of Agriculture estimates the probable production at 82,000 tons. This is the highest figure yet recorded in the country's cotton-growing annals, and exceeds the first official estimate by 13,300 tons.

The "Colectivo" Problem

The lengthy *colectivo* dispute arising out of the refusal of the owners of these vehicles to accept the expropriation terms offered by the Buenos Aires Transport Corporation has been reopened, due to the action of the corporation in putting the expropriated vehicles into storage, instead of into service, as it had not the personnel to operate them. The Government has issued a Decree prohibiting the expropriation of any more *colectivos* or buses, on the grounds that, as the corporation has neither the personnel required to handle the vehicles, nor the funds wherewith to compensate the owners, the vehicles must be released for service on the streets, where they are urgently needed, in view of the shortage of passenger-transport facilities.

PORTUGAL

Increasing Railway Traffic

Railway passenger traffic in Portugal increased by 12.7 per cent. in 1942 as compared with the previous year, and goods traffic increased by 15.1 per cent. This was due not only to the actual increased traffic but also to the fact that a considerable proportion of the passenger and goods traffic previously dealt with by road-motor services was thrown on to the railways because of the substantial curtailment of the road services necessitated by the shortage of fuel and tyres. The increase in passenger

and goods traffic continued in the first two months of 1943. More than five million passengers were carried during this period or more than one million in excess of the total carried in the same months of 1942. Goods conveyed totalled 829,834 metric tons as compared with 719,922 metric tons in the first two months of 1942, including 170,641 metric tons of express goods.

TURKEY

Locomotives and Rolling Stock

It was reported in Ankara on August 9 that 15 German locomotives have been delivered to Turkey under the trade agreement with Germany made by Dr. Clodius in January last. They are of "austerity" design, using the minimum practicable quantity of metal.

Also in accordance with the Turkish-German trade agreement, 150 wagons recently arrived at Istanbul from Germany. Negotiations between the two countries are said to be in progress for the supply of an additional 15 locomotives and 500 wagons.

Early in July, Turkey received 5 locomotives from the U.S.A.

With the object of assisting in moving agricultural produce, 25 locomotives and 250 wagons are reported to have been borrowed by the Turkish State Railways from the German Reichsbahn. This year's harvest in Turkey is stated to have been particularly plentiful, and to have proved an embarrassment to the Turkish State Railways by reason of shortage of locomotives and rolling stock.

Railway Debenture Loan

The railway debenture loan for £T15,000,000, floated on July 15, is reported to have been subscribed fully within a week. The issue price was £T19, and the loan is to bear interest at 7 per cent. per annum. The loan has been raised in connection with the new line eastward of Diarbekr towards the frontier of Iraq, and another line eastward of Mamuret el Aziz to the frontier of Persia. On the former, the track is stated to have been completed to the frontier of Iraq, beyond Cizre, but various works remain to be finished. On the line to the Persian frontier, the railway is understood to be at Karpahur. The next section of 62 miles is under construction, but from Mush onward the survey is still in progress.

CEYLON

Sunday Trains

At a meeting of the State Council recently the Minister of Communications & Works was asked to explain why the Sunday train-services had been curtailed without due notice to the public. In his reply the Minister traced the curtailment of train services to the delay in supplies of coal reaching Ceylon. It was a case of running trains to the last ounce of coal or conserving the present supplies for a longer period by curtailing Sunday train-services.

Suburban Stations

The abolition of certain suburban stations is among the measures which are being considered to enable the railway to conserve its fuel supplies. Already, the stopping of trains at various wayside halting-places has been discontinued; and the reduction in the number of suburban stations will result in a further saving. The abolition of the stations in question will not subject the travelling public to any great hardship as a frequent bus service will be available.

A Plea for a Railway Freight Classification of 0 or Nothing

and
the adoption of a mileage scale of charges for the conveyance of nothing

By Roger Gibb, F.S.S., F.R.Econ.S.

Formerly Chairman of the Railway Commission of Southern Rhodesia, Northern Rhodesia, and the Bechuanaland Protectorate

THIS is neither a poor joke nor a piece of nonsense, but is a perfectly serious proposal. The science of numbers or mathematics made one of its greatest strides forward after an Indian first conceived of the idea of the figure 0 or nothing and it is probable that railway rate making could be much improved if a scale of charges for the conveyance of nothing were adopted. So far as I know this proposal is original and has not yet been used anywhere.

Now to explain. It is understood that the railways are attempting to formulate new standard charges for goods traffic which are capable of being more generally applied than those adopted under the 1921 Act, and, if possible, can be used as a basis for road transport charges as well. Any such rates will have to pay far less attention to value than has been paid in the past. Value always was only a guide to the capacity of a traffic to bear rates and a very poor guide at that. Since the advent of road transport value has become more deceptive than ever for the capacity of a commodity to bear a railway rate is now determined by road transport costs and these in their turn are determined by those conditions governing lorry or wagon loading. Among these conditions, the size of consignments is perhaps the most important and therefore the railway rates of the future, if they are to be influenced by the same considerations as influence road charges, must be governed by the weight of consignments or, better still, by the weights loaded into railway wagons. By adopting such a system of charges the English railways will not become bold pioneers, but will be following the almost universal practice of other railways after an interval of many years. Any system of charges based on the size of consignments or wagon loads immediately raises the question of how to charge for nothing yet no railway anywhere seems to have tackled this problem rationally.

On January 22, 1932, I contributed an article to *The Railway Gazette* on the new German rates on consignments of less than 5 tons. From this article it appears that the new rates on bauxite for a distance of 100 km. were 137 pfennigs per 100 kilos on consignments from 5 to 10 tons, but 396 pfennigs per 100 kilos for smaller quantities. If, therefore, the trader could only muster $4\frac{1}{2}$ tons, it paid him to consign this lesser weight as 5 tons, because 5 tons at the 137 pfs. rate is cheaper than $4\frac{1}{2}$ tons at the 396 pfs. rate. Now that half ton is nothing—it has no existence except in the mind and is generally called "void" or "make up" weight. I shall call it void weight. Now take a high-class traffic instead of a low-class traffic, say, silk stockings, and again assume that the trader can not make up his consignment to 5 tons and consigns $4\frac{1}{2}$ tons of silk stockings and pays for 5 tons. For the void or non-existent half ton of silk stockings he will pay a much higher charge than the dealer in bauxite, as undoubtedly the 5-ton rates for silk stockings will be much higher than the 5-ton rate for bauxite. What justification can there be for making very different charges

in these two cases for the conveyance of the same thing, namely, nothing? But the matter does not end there. In all railway practice it is customary to permit mixing, as it is called; that is to say, the dealer in silk stockings is entitled to make his consignment of silk stockings up to the 5 tons required by the rate by adding half a ton of bauxite. Then his total charge will be $4\frac{1}{2}$ tons at the silk stockings rate and half a ton at the lower bauxite rate. In other words, if he asks the railway to transport $\frac{1}{2}$ ton of bauxite 100 km., together with his silk stockings the railway will be content to receive less money than it would have demanded for the $4\frac{1}{2}$ tons of silk stockings alone. This in railway jargon is known as an anomaly.

This does not complete the picture. Supposing my silk stocking merchant could raise only 4 tons of silk stockings and had not another half ton of bauxite handy. He would then offer the railway a mixed consignment of $4\frac{1}{2}$ tons of silk stockings and bauxite to be charged at the 5-ton rates. How is the void or non-existent $\frac{1}{2}$ ton to be charged—as bauxite or as silk stockings? It is simple enough to frame a regulation saying that the void weight shall be charged at the highest rate applicable to the mixed consignment, but what if a single pair of silk stockings is thrown into a wagon containing $4\frac{1}{2}$ tons of bauxite? Is that pair of silk stockings going to multiply by 10 the charges the railway demand for carrying nothing at all, but only an imaginary or void half ton? This, too, would be called anomalous and would be found unenforceable.

When I was trying to translate the German freight regulations I came across about 4 pages which seemed important, yet which I could not understand. So I asked a German to help me with the translation. He failed as completely as I had and could make neither head nor tail of the pages of regulations. He brought the volume back to me very disgusted at his failure. But he had not failed as completely as he thought, as between us we discovered that the difficult pages related to the manner of charging for void weight on mixed consignments and embodied the accumulated wisdom from years of doubt and difficulty on the German railways. My comment on these four pages after my German friend had gone was, "How thorough—and how stupid." The obvious and fair way out of the difficulties of charging for void weight was to classify void weight and apply a mileage scale to it. Then all void weights would be charged at the same mileage scale and all equities would be satisfied.

I suggest for the consideration of those planning our future railway rates that this railway classification of nothing should prove almost as useful as the zero became to the mathematicians. One of the difficulties of maintaining weight conditions attached to rates is what to do when the weights are not forthcoming. The existence of a scale of charges for the conveyance of

nothing will make rate making easier and reasonable conditions of carriage easier to enforce. I suggest for their consideration that the classification of void weight should not be too low. It is a serious traffic offence for a trader not to fill his wagons full of low-class commodities like coal or iron ore, and there is good ground for threatening to charge more for a half-filled wagon than for a well-filled wagon. In practice the void scale would hardly ever be applied to low-class traffic; the bauxite merchant would never tender less than 20 or 40 ton wagon loads. The classification of void weight should not therefore be put too low partly because if it were put very low it would reduce the inducement to traders in silk stockings to take a little trouble with the transport end of their businesses and arrange their distribution in a way likely to keep national transport costs down.

BRIDGE FOR SALVAGE.—The demolition of the temporary Waterloo Bridge, which has served London for 17 years, has begun. It is expected that the metal, amounting to some 3,000 tons, will be used for making munitions. The roadway and footway already are gone; and the main girders and the piers of steel and concrete, which also will be used for munitions, are expected to be removed during the latter part of this year.

REFRESHMENT-ROOM CROCKERY IN WESTERN AUSTRALIA.—Losses of crockery and glassware from railway refreshment rooms in Western Australia, both by theft and by thoughtlessness on the part of some travellers, and the difficulty of effecting replacements have been causing concern. As a result of complaints from some of the lessees (the refreshment services are leased by the Western Australian Government Railways to private caterers) the latter were circularised recently as to their views on the institution of a deposit system; and the consensus of opinion was that this would be beneficial. It has been decided, therefore, that a charge of 6d. may be made on each article (cup, saucer, or plate), the sum to be refunded on return. The introduction of the system at any individual room is at the discretion of the lessee, but any lessee charging deposits must conform to the uniform rate. The travelling public generally has accepted the new system, which is stated to be proving effective, with a good grace.

MACHINERY, PLANT & APPLIANCES CONTROL.—The Board of Trade announces that manufacturers of machinery and plant of kinds which are subject to control under the Machinery, Plant & Appliances (Control) Orders may make agreements to supply such goods, subject to obtaining any licences which may be required. Hitherto, not only supply, but agreement to supply, has been illegal unless a licence has been obtained beforehand. The new Order, which came into force on August 21, is an amendment to the Machinery, Plant & Appliances (Control) (No. 3) Order, 1942 (S.R. & O. 1942, No. 2487, price 2d.) and the later (1943) No. 4 Order (S.R. & O. 1943, No. 536, price 1d.). The provisions of these Orders in respect of actual supply remain unaltered, and existing arrangements for licensing exports of machinery and appliances are unaffected. The name of the new Order is the Machinery, Plant & Appliances (Control) (No. 5) Order, 1943 (S.R. & O. 1943, No. 1166), obtainable, price 1d., through any bookseller or newsagent, or direct from H.M. Stationery Office, Kingsway, London, W.C.2.

Type No.	Wheel Arrangement	Operating classification	Remarks	Dia. of cylinders	Stroke	Dia. of driving wheels	Dia. of leading and trailing wheels	Total wheelbase (coupled)	Boiler pressure lb. per sq. in.	Graze area sq. ft.	Total heating surface sq. ft.	Super-heating surface sq. ft.	Weight in working order	Adhesive weight	Max. permissible speed m.p.h.	Tender	Dia. of wheels	Water gal.	Coal tonnes	Weight in working order
01	4-6-2	S.36.20		23½ in.	26 in.	6 ft. 6½ in.	3 ft. 3½ in.	66 ft. 8 in.	227	48½	2,658	924	109 tons 6 cwt.	58 tons 15 cwt.	80½	8 wheel	3 ft. 3½ in.	7,480	10	72 tons 1 cwt.
0110	4-6-2	S.36.20		3 cylinders	26 in.	6 ft. 6½ in.	4 ft. 1½ in.	66 ft. 9 in.	227	46½	2,657	931	112 tons 0 cwt.	60 tons 3 cwt.	93½	10 wheel	3 ft. 3½ in.	8,360	10	80 tons 6 cwt.
02	4-6-2	S.36.20	compound	18½ in.	26 in.	6 ft. 6½ in.	4 ft. 1½ in.	66 ft. 8 in.	227	48½	2,658	924	111 tons 14 cwt.	59 tons 7 cwt.	80½	8 wheel	3 ft. 3½ in.	7,040	10	72 tons 1 cwt.
03	4-6-2	S.36.17	derived from 03.123.5.36.18	22½ in.	26 in.	6 ft. 6½ in.	3 ft. 3½ in.	66 ft. 4 in.	227	44	2,191	777	98 tons 14 cwt.	53 tons 8 cwt.	80½	8 wheel	3 ft. 3½ in.	7,480	10	73 tons 8 cwt.
0310	4-6-2	S.36.18		3 cylinders	26 in.	6 ft. 6½ in.	3 ft. 3½ in.	66 ft. 4 in.	227	42	2,188	777	101 tons 11 cwt.	54 tons 4 cwt.	93½	8 wheel	3 ft. 3½ in.	7,480	10	74 tons 14 cwt.
05	4-6-4	S.37.19	streamline	18½ in.	26 in.	7 ft. 6½ in.	3 ft. 7½ in.	72 ft. 5 in.	284	54	2,755	968	127 tons 17 cwt.	78 tons 11 cwt.	108½	10 wheel	3 ft. 3½ in.	8,360	10	80 tons 6 cwt.
06	4-8-4	S.48.20/or 18		3 cylinders	26½ in.	6 ft. 6½ in.	3 ft. 3½ in.	73 ft. 8 in.	284	54	3,109	1,426	141 tons 6 cwt.	74 tons 10 cwt.	87	10 wheel	3 ft. 3½ in.	8,360	10	80 tons 6 cwt.
24	2-6-0	P.34.15		19½ in.	26 in.	4 ft. 11 in.	2 ft. 9½ in.	43 ft. 6 in.	200	22	1,123	400	56 tons 10 cwt.	48 tons 11 cwt.	56	6 wheel	3 ft. 3½ in.	3,740	6	41 tons 2 cwt.
41	2-8-2	G.46.20/or 18	express goods locomotive	20½ in.	26½ in.	5 ft. 3 in.	3 ft. 3½ in.	66 ft. 2½ in.	284	44	2,191	777	100 tons 6 cwt.	76 tons 15 cwt.	56	OR 6 wheel	3 ft. 3½ in.	3,520	6	42 tons 12 cwt.
43	2-10-0	G.56.20		26½ in.	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	62 ft. 11½ in.	200	50	2,550	1,076	109 tons 1 cwt.	95 tons 1 cwt.	43½	8 wheel	3 ft. 3½ in.	7,040	10	72 tons 9 cwt.
44	2-10-0	G.56.20		3 cylinders	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	62 ft. 11½ in.	227	49	2,550	1,076	108 tons 7 cwt.	93 tons 14 cwt.	50	8 wheel	3 ft. 3½ in.	7,480	10	72 tons 0 cwt.
45	2-10-2	G.57.20/or 18	express goods locomotive	20½ in.	26 in.	5 ft. 3 in.	3 ft. 3½ in.	71 ft. 4 in.	284	54	3,109	1,426	126 tons 7 cwt.	97 tons 16 cwt.	56	10 wheel	3 ft. 3½ in.	8,360	10	79 tons 18 cwt.
50	2-10-0	G.56.15		22½ in.	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	62 ft. 0 in.	227	42	1,911	684	85 tons 2 cwt.	73 tons 16 cwt.	50	8 wheel	3 ft. 3½ in.	5,720	8	59 tons 1 cwt.
61	4-6-4	S.37.18	61,002 is 4-6-6 3 cylinders	15½ in.	26 in.	7 ft. 6½ in.	3 ft. 7½ in.	49 ft. 3½ in.	284	30	1,614	745	142 tons 4 cwt.	54 tons 12 cwt.	108½	8 wheel	3 ft. 3½ in.	4,620	6	
62	4-6-4	Pt.37.20		22½ in.	26 in.	5 ft. 6½ in.	2 ft. 9½ in.	43 ft. 7½ in.	200	38	2,100	780	121 tons 13 cwt.	59 tons 17 cwt.	62			3,080	4.3	
64	2-6-2	Pt.35.15		15½ in.	26 in.	5 ft. 1 in.	2 ft. 9½ in.	29 ft. 6 in.	200	22	1,123	400	73 tons 14 cwt.	44 tons 15 cwt.	56			1,980	3	
71	0-6-0	Gt.33.17	shunting locomotive	17½ in.	21½ in.	3 ft. 7½ in.	2 ft. 9½ in.	10 ft. 6 in.	200	16	749	274	33 tons 10 cwt.	23 tons 10 cwt.	28			1,100	2	
81	0-8-0	Gt.44.17	shunting locomotive	19½ in.	21½ in.	3 ft. 7½ in.	—	13 ft. 9 in.	200	19	1,031	366	66 tons 8 cwt.	66 tons 8 cwt.	28			1,760	3	
84	2-10-2	Gt.57.18	locomotive with Eckhardt truck or Luttermoller mechanism	3 cylinders	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	38 ft. 3 in.	227	40	2,260	924	123 tons 10 cwt.	89 tons 17 cwt.	50			3,080	3	
85	2-10-2	Gt.57.20		3 cylinders	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	41 ft. 0 in.	200	38	2,107	780	131 tons 9 cwt.	98 tons 2 cwt.	50			3,080	5	
86	2-8-2	Gt.46.15		22½ in.	26 in.	4 ft. 7½ in.	2 ft. 9½ in.	33 ft. 9½ in.	200	25	1,262	506	87 tons 12 cwt.	59 tons 12 cwt.	50			1,980	4	
87	0-10-0	Gt.55.17	for harbour lines (Luttermoller mechanism)	23½ in.	21½ in.	3 ft. 7½ in.	—	20 ft. 4 in.	200	25	1,262	506	84 tons 5 cwt.	84 tons 5 cwt.	28			1,980	3	
89N	0-6-0	Gt.33.15	shunting locomotive	16½ in.	21½ in.	3 ft. 7½ in.	—	10 ft. 10 in.	200	15	885	none	45 tons 17 cwt.	45 tons 17 cwt.	28			1,056	2.6	
89H	0-6-0	Gt.33.15	shunting locomotive	16½ in.	21½ in.	3 ft. 7½ in.	—	10 ft. 10 in.	200	15	731	260	45 tons 1 cwt.	45 tons 1 cwt.	28			1,056	2.6	
9522	2-10-2	K.57.10	locomotive	15½ in.	15½ in.	3 ft. 2½ in.	1 ft. 9½ in.	25 ft. 3 in.	200	19	1,031	355	64 tons 15 cwt.	49 tons 14 cwt.	25			1,760	3	
9515	2-10-2	K.57.9	locomotive	17½ in.	15½ in.	2 ft. 7½ in.	1 ft. 5½ in.	24 ft. 11 in.	200	18½	864	312	55 tons 16 cwt.	45 tons 7 cwt.	18			1,276	2.5	

In the operating classification column S = express, P = ordinary passenger, G = goods, and K = narrow-gauge engine (all tank type). The first digit denotes number of coupled axles, the second the total number of axles and the final figures after the full point denote the average weight on the coupled axles in tonnes.

N = saturated, H = superheated.

Table giving the leading particulars of the Standard (Einheits) and other principal Reichsbahn engines [1939]

GERMAN LOCOMOTIVE STANDARDISATION AND CLASSIFICATION

(See article opposite)

German Locomotive Standardisation and Classification

Much progress had been made pre-war in standardising locomotive designs on the Reichsbahn. Many other types, built for the former State systems are still running, and a system of designating the classes and characteristics is in use

ALL German locomotives of normal 4 ft. 8½ in. gauge are distinguished by the following key letters: S for express engines, P for ordinary passenger train engines, G for goods train engines, L for light-railway engines, and Z for rack rail engines. All narrow-gauge engines, for whatever class of service and of whatever gauge, are distinguished by the letter K.

The main types of express locomotive are recognised from the diameter of the coupled wheels, which serves to ensure smooth riding at high speeds. All engines having a driving wheel diameter of 1,800 mm. (5 ft. 11 in.) or over, are able to run at speeds of 90 km.p.h. (56 m.p.h.) and over, are considered as belonging to the S or express class. The ordinary passenger train engines having driving wheels of 1,500 mm. (4 ft. 11 in.) and over—with few exceptions—are really regarded as coming within the range of the P—passenger—class. The goods engines, with the exception of some recent ones for express goods services, have smaller diameter wheels, giving slower speed with greater ratio of piston effect, resulting in greater tractive effort.

In practice, it is not possible to draw a hard and fast line between the various types, as some locomotives which belong strictly to the ordinary passenger class are suitable for express service, as they are capable of running at high speed without undue oscillation. There are some constructional features, too, which play a part in this matter, of which the above simple form of classification takes no account. Local circumstances also necessitate engines being used for services with which they are not normally expected to

deal. On light railways, for example, passenger trains are often hauled by goods locomotives.

If an engine has a tender, this is not specially indicated; but a tank engine is distinguished by the letter "t" being added to the S, G, P, etc., as required. Shunting engines are classed under goods tank engines (Gt), but other kinds of engine are used at times for shunting work.

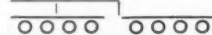
Meanings of Numerals

The numerals included in the operating classification symbol have the following meanings: The first digit indicates the number of coupled axles, the second the total number of axles. Then follows a full point, the figures after which show the average adhesive weight on the coupled axles, of course in metric tons. Thus, 35.17 means an engine having three coupled axles and five axles altogether, with an average adhesive weight per coupled axle of 17 tonnes. The maximum ordinary draw-bar pull can be obtained approximately from these figures; it amounts to about one-fifth of the total adhesive weight. In the above example of a 35.17 engine we have three coupled axles, with an average adhesive weight of 17 tonnes, or 51 tonnes total. Dividing by 5 we have 10.2 tonnes for draw-bar pull, or 10,200 kg. (22,440 lb.).

Other ways of classifying locomotives can of course be adopted, according to the type of boiler, the existence or otherwise of a superheater, or simple or multiple expansion. Single expansion locomotives can have two, three, or four cylinders (known as *Zwillings*, *Drillings*, *Vierlings*—engines; the first term is little used). Compound engines can have two or four cylinders; sometimes, but seldom, three.

The Verein has a method of classifying engines resting on giving first of all the axle arrangement, beginning at the front of the locomotive and giving in figures the number of leading axles, then the coupled axles by letters (A for one, B for two, etc.), and then again figures to show the number of trailing axles. An apostrophe after a number shows that the axles are carried in a separate frame such as bogie, pony truck, Krauss-Helmholtz truck, etc., and one after a letter means that the driving axles indicated are also in a truck of some sort. Thus 2' C 1' means a two-axle bogie, three coupled axles, and a pony truck. Likewise D' D means an engine with four driving

axles in a truck to themselves, then four others in the ordinary main framing, or



Then certain signs are added, such as—

n saturated steam. h superheated steam.
2, 3, 4, etc., the number of cylinders, then
v for compound. Therefore

2' C 1' h 4 v would indicate a four cylinder compound superheated engine, of the (British) 4-6-2 classification.

Method of Numbering

In early years all locomotives in what is now Germany were given names, but later the various German States adopted the practice of numbering them. When the Reichsbahn was formed a standard system of numeration was arranged. The present numbers are composed of a two digit prefix followed by a space and a three or four digit serial number, with the following sub-divisions:—

S engines have the prefix 01 to 19; P engines have 20 to 39; G engines have 40 to 59; St. and Pt. engines have 60 to 79; Gt. engines have 80 to 96; Z engines have 97; L engines have 98; and K engines have 99.

In the case of the *Einheits* (standard) engines, built since the formation of the Reichsbahn on standard principles with as many interchangeable parts as possible, as well as the other Reichsbahn types (engines built since the Reichsbahn was formed but to firm's designs), the basis of the numbering is the operating classification and the type of construction. For instance, there are two standard (*Einheits*) goods locomotives with the same operating classification, G56.20, with the prefixes 43 and 44, thus—

43. 1' E h2. (2-10-0 superheated 2-cylinder simple).
44. 1' E h3. (2-10-0 superheated 3-cylinder simple).

Special types of engine, built to test new ideas, bear a suitable suffix letter, such as T for turbine engine, and H for extra high pressure engine.

The engines belonging formerly to the German States have been brought into the numbering system in such a way that all engines with the same wheel arrangement and of the same main class have now the same prefix number, apart from any other differences of construction. For instance, all express locomotives of the old State systems of the 2' C 1' (British 4-6-2) type have the prefix 18. The three or four digit main numbers, which follow the prefix, are used to distinguish different types of engine of the same wheel arrangement, specified thousand, or hundred (and, in the case of narrow-gauge engines, also tens), series being allocated to them. To abbreviate matters, the thousand series are indicated by the two first figures only, the hundreds series by the first figure only; 10-30 indicates the series having the numbers 1001 to 3099, 0-2 the series having the numbers 001 to 299. If the ordinary prefix is added to this sign so obtained, then a sign is produced able to indicate the separate types coming under one prefix. For instance, the operating classification P35.17 (the old Prussian P8) has, in common with all 2 C (4-6-0) ordinary passenger engines, the prefix 38. As serial numbers for these engines, the 10 to 40 thousand series are allocated, that is to say the numbers from 1001 to 4099. This actual class is thus called 3810-40.

Originally the serial numbers of the standard-gauge standard (*Einheits*) engines of the Reichsbahn began at 1; the first 10 type engine was thus numbered 01 001.

Standard and other Reichsbahn Engines

The standard signs are used, but the usual British wheel order is given; the signs are explained generally in the accompanying text.

Express Locomotives				
01	S.36.20	4-6-2	h2	
0110	S.36.20	4-6-2	h3	
02	S.36.20	4-6-2	h4v	Being rebuilt as 01 engines.
03	S.36.17	4-6-2	h2	derived from 03 123; S36.18 engine.
0310	S.36.18	4-6-2	h3	
05	S.37.19	4-6-4	h3	
06*	S.48.20/18	4-8-4	h3	Express streamlined engine.
Ordinary Passenger Locomotives				
24	P.34.15	2-6-0	h2	
24†	P.34.15	2-6-0	h2v	medium pressure boiler.
Goods Train Locomotives				
41*	G.46.20/18	2-8-2	h2	express goods train engine.
43	G.56.20	2-10-0	h2	
44	G.56.20	2-10-0	h3	
44†	G.56.20	2-10-0	h4v	medium pressure boiler.
45*	G.57.20/18	2-10-2	h3	express goods train engine.
50	G.56.15	2-10-0	h2	
Express Passenger and Ordinary Passenger Tank Locomotives				
61	St.37.18	4-6-4	h2	engine No. 61 002 is 4-6-6 h3
62	Pt.37.20	4-6-4	h2	
64	Pt.35.15	2-6-2	h2	
710	Pt.24.15	2-4-2	h2	
Goods Tank Engines				
80	Gt.33.17	0-6-0	h2	shunting engine.
81	Gt.44.17	0-8-0	h2	shunting engine.
84	Gt.57.18	2-10-2	h3	with Eckhardt truck.
84	Gt.58.18	2-10-2	h2	with Luttermöller mechanism.
85	Gt.57.20	2-10-2	h3	
86	Gt.46.15	2-8-2	h2	
87	Gt.55.17	0-10-0	h2	engine for harbour and docklines with Luttermöller mechanism.
89N	Gt.33.15	0-6-0	n2	shunting engine.
89H	Gt.33.15	0-6-0	h2	shunting engine.
Narrow-Gauge Locomotives				
9922	K.57.10	2-10-2	h2	metre gauge (3 ft. 3½ in.).
9922	K.46.8	2-8-2	h2	900 mm. gauge (2 ft. 11½ in.).
9973	K.57.9	2-10-2	h2	750 mm. gauge (2 ft. 5½ in.).

Load on coupled axle 18 or 20 tonnes at choice

† Not in tabulated chart

LOCOMOTIVES OF THE FORMER GERMAN STATE LINES

Express Locomotives					
170-1	S.35.17	Prussian S.10	4-6-0	h4	
172	S.35.17	Prussian S.102	4-6-0	h3	
172	S.35.18	{ Medium pressure boiler rebuilt Prussian S.102	4-6-0	h3	
174	S.35.15	Bavarian S.3/5	4-6-0	h4v	
175	S.35.16	Bavarian S.3/5	4-6-0	h4v	
1710-12	S.35.17	Prussian S.101	4-6-0	h4v	
180	S.36.17	Saxon XVIII Ø	4-6-2	h3	
181	S.36.16	Württemberg C	4-6-2	h4v	
185	S.36.17	Baden IV h1-3	4-6-2	h4v	
184-5	S.36.16	Bavarian S.3/6	4-6-2	h4v	
184	S.36.17	Bavarian S.3/6	4-6-2	h4v	
185	S.36.18	Bavarian S.3/6	4-6-2	h4v	
190	S.46.17	Saxon XX Ø	2-8-2	h4v	
Ordinary Passenger Locomotives					
360-5	P.24.15	Prussian P.42	4-4-0	n2v	
370-1	P.34.15	Prussian P.6	2-6-0	h2	
380	P.35.14	Bavarian P.3/5 N	4-6-0	h4v (superheated in 1925)	
382-3	P.35.15	Saxon XII Ø 2	4-6-0	h2	
384	P.35.15	Bavarian P.3/5 H	4-6-0	h4v	
3810-40	P.35.17	Prussian P.8	4-6-0	h2	
390-2	P.46.19	Prussian P.10	2-8-2	h3	

Goods Train Locomotives					
549-11	G.34.14	Prussian G.54 H	2-6-0	h2v	
5415-17	G.34.16	Bavarian G.3/4 H	2-6-0	h2	
550-6	G.44.13	Prussian G.71	0-8-0	n2	
5516-22	G.44.14	Prussian G.8	0-8-0	h2	
5525-24	G.44.16	Prussian G.9 H	0-8-0	h2	
5525-56	G.44.17	Prussian G.81	0-8-0	h2	
5598	G.44.17	Mecklenburg G.81	0-8-0	h2	
561	G.45.17	Prussian G.85	2-8-0	h3	
562-7	G.45.16	{ Prussian G.81 with leading pony truck	2-8-0	h2	
569-11	G.45.16	Bavarian G.4/5 H	2-8-0	h4v	
5620-50	G.45.17	Prussian G.82	2-8-0	h2 (also Oldenburg G.82)	
575	G.55.16	Bavarian G.5/5	0-10-0	h4v	
575	G.55.17	Bavarian G.5/5	0-10-0	h4v	
5710-40	G.55.15	Prussian G.10	0-10-0	h2	
580	G.56.17	Prussian G.121	2-10-0	h3	
582-5	G.56.16	Baden G.121-7	2-10-0	h3	
584	G.56.16	Saxon XIII Ø	2-10-0	h3	
585	G.56.16	Württemberg G.12	2-10-0	h3	
5810-22	G.56.16	Prussian G.12	2-10-0	h3	
590	G.67.16	Württemberg K	2-12-0	h4v	

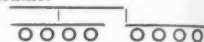
Ordinary Passenger Train Tank Locomotives					
700	Pt.23.14	Bavarian Pt. 2/3	2-4-0	h2 (some with fixed leading axle; some with pony truck)	
701	Pt.23.14	Baden Ig	2-4-0	h2 (fixed leading axle)	
701	Pt.23.15	Baden Ig	2-4-0	h2 (fixed leading axle)	
712	Pt.24.16	Bavarian Pt. 2/4 H	2-4-2	h2	
713	Pt.24.15	Saxon IV T	2-4-2	n2 (fixed leading and trailing axles)	
730	Pt.25.15	Bavarian P.2 II	2-4-4	n2	
730-1	Pt.25.15	Bavarian D XII	2-4-4	n2	
740-3	Pt.34.16	Prussian T II	2-6-0	h2	
740-3	Pt.34.16	Prussian T II H	2-6-0	h2	
744-15	Pt.34.17	Prussian T 12	2-6-0	h2	
750	Pt.35.15	Württemberg T 5	2-6-2	h2	
751-5	Pt.35.14	Baden VI cl-11	2-6-2	n2	
754	Pt.35.16	Baden VI cl-5	2-6-2	h2	
755	Pt.35.16	Saxon XIV Ø T	2-6-2	h2	
760	Pt.35.16	Prussian T.10	4-6-0	h2	
770	Pt.36.16	Bavarian P.5	2-6-4	h2	
771	Pt.36.16	Bavarian Pt. 3/6	2-6-4	h2	
780-5	Pt.37.17	Prussian T.18	4-6-4	h2	

Fixed leading wheels, etc., above means that the axles are in the main framing and not in a separate truck; they may of course have some radial motion arranged for.

Goods Train Tank Locomotives					
891	Gt.33.14	Bavarian T 3	0-6-0	n2	
892	Gt.33.14	Saxon V T	0-6-0	n2	
892	Gt.33.16	Saxon V T	0-6-0	n2	
896	Gt.33.15	Bavarian D II	0-6-0	n2	
897	Gt.33.15	Bavarian R 3/3	0-6-0	n2	

Goods Train Tank Locomotives—(contd.)					
898	Gt.33.16	Bavarian R 3/3	0-6-0	n2	
8970-75	Gt.33.12	Prussian T 3	0-6-0	n2	
8980	Gt.33.11	Mecklenburg T 3b	0-6-0	n2	
915-18	Gt.34.15	Prussian T 95	2-6-0	n2	
9119	Gt.34.12	Mecklenburg T 4	2-6-0	n2	
9120	Gt.34.15	Württemberg T 9	2-6-0	n2	
920	Gt.44.15	Württemberg T 6	0-8-0	h2	
921	Gt.44.16	Württemberg T 4	0-8-0	n2	
922	Gt.44.14	Baden X b1-2	0-8-0	n2	
922	Gt.44.15	Baden X b3-6	0-8-0	n2	
922-5	Gt.44.15	Baden X b7	0-8-0	n2	
924	Gt.44.16	Oldenburg T 13	0-8-0	h2	
925-10	Gt.44.15	Prussian T 13	0-8-0	n2	
9220	Gt.44.16	Bavarian R 4/4	0-8-0	n2	
9220	Gt.44.17	Bavarian R 4/4	0-8-0	n2	
930-4	Gt.46.16	Prussian T 14	2-8-2	h2	
935-12	Gt.46.17	Prussian T 141	2-8-2	h2	
941	Gt.55.13	Württemberg Tn	0-10-0	h2	
942-4	Gt.55.15	Prussian T 16	0-10-0	h2	
945-18	Gt.55.17	Prussian T 161	0-10-0	h2	
9420-21	Gt.55.16	Saxon XI Ø T	0-10-0	h2	
950	Gt.57.19	Bavarian Pt. 20	2-10-2	h2	
960	Gt.88.15	Bavarian Gt.2x4/4	0-8-8-0	h4v (one steam bogie)	
960	Gt.88.16	Bavarian Gt.2x4/4	0-8-8-0	h4v (one steam bogie)	

The two 96 series locomotives have an eight-wheel steam truck forward, then eight driving wheels in the frame.



Rack Rail Locomotives					
971	Z.34.15	Bavarian PzL 3/4	0-6-2	h2 (4v)	
975	Z.55.15	Württemberg E+1 Z	0-10-0	h2 (4v)	
Light Railway Locomotives					
980	L.44.15	Saxon I T Ø	0-4-4-0	n4v (two steam bogies)	
981	L.22.14	Oldenburg T 3	0-4-0	n2	
985	L.22.11	Bavarian Pt.L 2/2	0-4-0	h2	
984-5	L.34.11	Bavarian D XI	0-6-2	n2	
985	L.34.11	Bavarian Pt.L 3/4	0-6-2	n2	
986	L.34.12	Bavarian D VIII	0-6-2	n2	
987	L.44.11	Bavarian B8 II	0-4-4-0	n4v (one steam bogie)	
988	L.44.11	Bavarian Gt.L 4/4	0-8-0	h2	
988-12	L.44.12	Bavarian Gt.L 4/4	0-8-0	h2	
9810	L.45.11	Bavarian Gt.L 4/5	0-8-2	h2	
9811	L.45.11	Bavarian Gt.L 4/5	2-8-0	h2	

Engine 987 has a four-wheel steam bogie followed by four driving wheels in the frame.



Narrow-Gauge Locomotives					
Metre gauge (3 ft. 3½ in.)					
9902	K.22.5	Oldenburg No. 3	0-4-0	n2	
9902	K.22.6	Oldenburg No. 4-5	0-4-0	n2	
9904-06	K.33.10	Prussian T 33	0-6-0	n2	
9908-09	K.33.8	Bavarian L I	0-6-0	n2	
9909	K.33.8	Bavarian Pts. 3/3 N	0-6-0	n2	
9910-11	K.33.8	Bavarian Pts. 3/3 H	0-6-0	n2	
9916	K.44.10	Saxon IM	0-4-4-0	n4v (two steam bogies)	
9918	K.55.8	Prussian T 40	0-10-0	h2	
9919	K.55.9	Württemberg	0-10-0	h2	
9921	K.33.6	Oldenburg	0-6-0	n2	
99720	K.33.8	Baden	0-6-0	n2 (Mosbach-Mudau line)	
785 mm. Gauge (2 ft. 7 in.)					
9940	K.44.7	Prussian T 37	0-8-0	n2	
9941-42	K.44.8	Prussian T 38	0-8-0	h2	
9945-44	K.55.8	Prussian T 39	0-10-0	h2	

750 mm. Gauge (2 ft. 5½ in.)					
9951-57	K.44.7	Saxon IV K	0-4-4-0	n4v (two steam bogies)	
9958-60	K.44.8	Saxon IV K	0-4-4-0	n4v (two steam bogies)	
9961	K.44.7	Saxon V K	0-8-0	n2v	
9965	K.44.7	Württemberg Tssd	0-4-4-0	n4v (one steam bogie)	
9964-65	K.55.8	Saxon VI K	0-10-0	h2	
9967-72	K.55.9	Saxon, Württemberg	0-10-0	h2	

The engine series 99⁶⁵ has a four-wheel steam bogie followed by four coupled wheels in the main frame.



But recently it has become the custom to allocate certain thousand and hundred series to these engines for the purpose of distinguishing certain differences between them. For instance, there is a class called 01^v, which is the 01 engine with three cylinders. In the case of the narrow-gauge engines, which all have the prefix number 99, certain numerical series are allocated to distinguish the different gauges.

Name Plates on the Engines

The standard official regulations (Eisenbahn-Bau- und Betriebsordnung) prescribe that all locomotives used for public service in Germany must bear a plate or plates with the following information thereon:—

- Name of owning concern.
- Service number or name of engine.

- Maker's name, number, and year of manufacture.
- Maximum permissible speed.
- Particulars of the last examination of the motion, frame, and boiler.
- Type of brake.

(g) On the boiler itself must appear (on a metal plate) the maximum permissible pressure, maker's name, maker's number, and year of manufacture; this must be visible after the lagging is put on.

Tenders must have:—

- (Engine's) number or name.
- Maker's name, number and year of manufacture.
- Water capacity in cubic metres (a cb. m., is 220 gal.) and coal capacity in metric tons.

Reichsbahn engines also bear the following signs:—

- Name of the Divisional Management and the home station of the engine.
- Operating classification sign.

(3) The sign Δ when any portion of the engine infringes on the clearance gauge laid down in the official regulations. If a line is shown over this sign Δ it means that the chimney can be turned down at the top, to bring it within the clearance limits.

(4) Date when the air brake was last inspected.

(5) The sign \leftarrow on buffer beam when the engine has been accurately examined in the shops and everything certified as correct.

(6) A red dot beside the operating classification sign when the firebox is of steel.

In addition, signs are painted on to indicate where various handles, etc., are to be found, such as brake cut-outs and so on. The various auxiliaries, such as pumps and reservoirs, also bear markings giving information about their type, time of last inspection, and the like.

Canadian Pacific Railway Overhead Refrigerator Wagon Fleet

Controlled temperature enables the curing of bacon to be continued during transit



Icing a bacon-carrying freight wagon, Canadian Pacific Railway

THE Canadian Pacific Railway's overhead refrigerator wagons, of a type pioneered on the North American continent seven years ago by the Canadian Pacific, have handled many million of pounds of Canadian bacon for export to Great Britain during the war. There are 360 of this overhead type of

wagons among the 3,906 wagons in the refrigerator equipment operated by the railway, which also has in service 3,546 refrigerator wagons of other types.

The overhead wagons, the first of which was brought out in 1936 and on which improvements have been made as the result

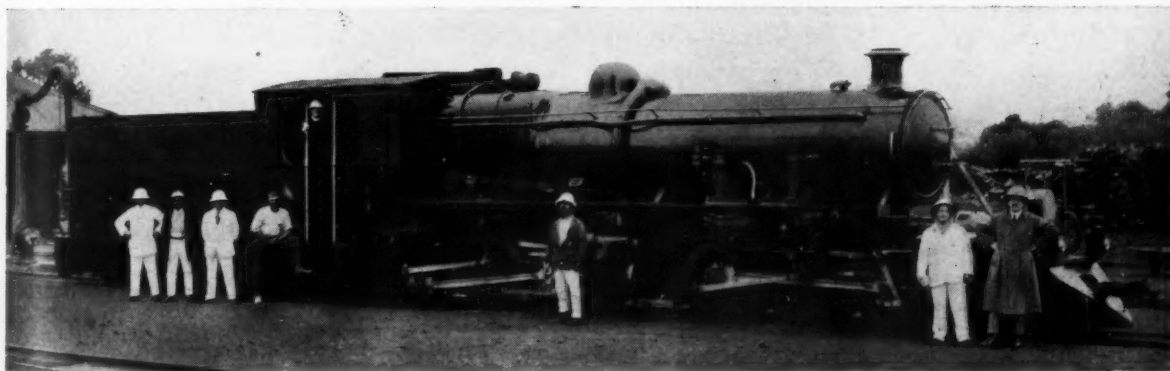
of experience, are reserved in wartime for the "Bacon to Britain" run from interior meat-packing plants to the coast. A close range of controlled temperature is required in the handling of bacon, so that the cure may be continued while the product is in transit. These special wagons meet this requirement, and, in addition, handle full-capacity tonnage, thus contributing to greater wagon efficiency at a time when railway equipment is in great demand.

The return of the wagons to the plants is given special handling in order to obtain the utmost use of the equipment, a Canadian Pacific policy in the war-carrying job the company is doing so well.

These wagons now in steady bacon service constitute the largest overhead type refrigerator wagon fleet in Canada and the United States, and represent a development reaching back to 1936. At that time, as a test, the Canadian Pacific converted 10 refrigerator wagons, in which the cooling system was supplied by ice in bunkers at the ends of the wagons, to the new overhead system whereby eight ice compartments were built in the insulated roofs.

These ten overhead tank-refrigerator wagons were the first put into service on the North American Continent. Their conversion was carried out under the direction of Mr. H. B. Bowen, Chief of Motive Power and Rolling Stock. After exhaustive tests with the converted wagons 50 completely new wagons were built in 1938-39. Then 200 more were constructed in 1940, and another 100 were added last year, all of them vitally needed for bacon transport. Special improvements were effected in the 1942 wagons to eliminate brine corrosion around the ice bunkers. The exteriors of the wagons are painted box-wagon red, similar to other Canadian Pacific freight vehicles.

They are suitable for general traffic as well as for bacon transport and like all wagons in Canadian Pacific refrigeration service, they can be heated in winter for transport of perishable commodities and also are specially built to allow ventilating of similar traffic when required.



When visiting Burma some years ago as head of a Mission of Help, the late Dr. Wood, then Bishop of Winchester, travelled on the footplate, by motor trolley, and in the Government Inspector's inspection saloon from Maymyo to the Gokeik Viaduct and back on the Mandalay-Lashio section of the Burma Railways

The figures in the above illustration are (left to right), the shed staff at Maymyo shed, where the photograph was taken, the "jack" or second fireman, Dr. Wood (on the footplate), the fireman, the driver of the Mallet compound "N" class 0-6-0 + 0-6-0 type locomotive No. 4, and the Government Inspector at that time. These "N" class engines were built by the North British Locomotive Co. Ltd. for working passenger and goods trains over the long 1 in 25 and 1 in 40 grades of this branch. Their 29,400 lb. tractive effort, assisted by the use of the whole 60-ton weight of these engines for adhesion, enables them to haul 120-130-ton loads up the former and 250-ton loads up the latter grade. Unless all were destroyed by the Burma Railway staff, some of these engines are presumably working for the Japanese at present, though the Gokeik viaduct is probably out of action, as it has been bombed by the Allies several times.

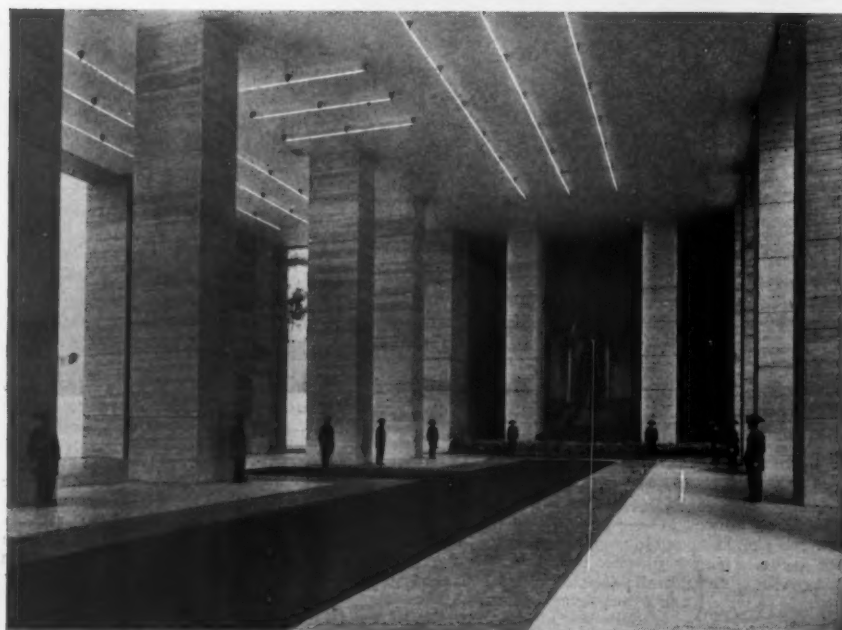


The "Axis" Station in Rome

Views of the special Rome-Ostiense Station, built on the occasion of Hitler's visit in 1938, and which is outside the area most affected by recent Allied bombing raids on Rome

Left: View from the road approach showing two of the decorated pylons and neon-type lighting standard, and the statues flanking the main portico

Right: Night view of the station from the railway, showing the curved glazed portion between the platform roofing, the hall of honour, and the main entrance thereto from the platform



Left: Interior of the hall of honour. The neon-type lighting in the ceiling can be seen clearly

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RAILWAY NEWS SECTION

PERSONAL

BRITISH-OWNED ARGENTINE RAILWAY
BOARDS

In furtherance of their policy of closer working and co-ordination between the Anglo-Argentine broad-gauge railways, the respective boards have made the following appointments:—

Mr. J. M. Eddy, who is Chairman of the Buenos Ayres Great Southern Railway Co. Ltd. and of the Buenos Ayres Western Railway Limited, and a Director of the Buenos Ayres & Pacific Railway

appointment, of Sir Clive Baillieu as Deputy-President of the federation. Sir Clive Baillieu, who is a Director of the Dunlop Rubber Co. Ltd., is resigning from his position as the British Member of the Combined Raw Materials Board & Head of the British Raw Materials Mission in Washington, to return to England to take up his new position, with a view to assuming the Presidency at a later date if the members in general meeting accept the recommendation of the council that he should be nominated for that Deputy-President of the Federation. Sir office.

Federated Malay States Railways; he resigned subsequently from the service of the latter, and, with Mr. H. W. T. Fogden, established the firm of Fogden, Brisbane & Co. Ltd. This company carried out large civil-engineering contracts in Malaya, Hong Kong, and elsewhere in the Far East for the Admiralty, War Office, and Air Ministry, and for colonial governments. Mr. Brisbane was a Director of a number of Malayan companies, and is a past-President of the Master Contractors Association of Malaya and of the Engineering Association of Malaya. He succeeds, as General Manager of the Midland Railway of Western



Mr. A. M. Sims, C.I.E., A.M.Inst.C.E.

Chief Engineer, North Western Railway (India), who was made a Companion of the Order of the Indian Empire in the New Year Honours List

Co. Ltd., has been appointed a Director of the Central Argentine Railway Limited.

The Rt. Hon. Lord Forbes, who is a Director of the Central Argentine Railway Limited, has been appointed a Director of the Buenos Ayres Western Railway Limited and of the Buenos Ayres & Pacific Railway Co. Ltd.

Mr. H. C. Drayton, who is a Director of the Buenos Ayres & Pacific Railway Co. Ltd., has been appointed a Director of the Central Argentine Railway Limited and of the Buenos Ayres Great Southern Railway Co. Ltd.

(See editorial note, page 197)

The Rt. Hon. the Earl Peel, who is a Director of the London Midland & Scottish Railway Company, has been elected to the boards of the Midland Bank Limited and the Midland Bank Executor & Trustee Co. Ltd.

The Grand Council of the Federation of British Industries has approved the

We regret to record the death, on August 18, at the age of 51, of Lt.-Colonel Clarence I. A. Dubs, T.D., a Director of the North British Locomotive Co. Ltd.

The late Mr. H. S. Whittaker, formerly District Controller, Preston, L.M.S.R., left £4,960.

Mr. D. W. Brisbane, F.R.G.S., M.Inst.C.E., M.I.Struct.E., who, as recorded in our April 30 issue, has been appointed General Manager of the Midland Railway of Western Australia, was trained and qualified as a civil engineer under the then Engineer-in-Chief of Western Australia, Mr. James Thompson, M.Inst.C.E. Mr. Brisbane served for a number of years in the Railway Construction Branch of the Public Works Department of the State, and was in charge of the construction of several local lines. After leaving the State service, he was engaged in railway construction in Malaya, and became Divisional Engineer,

Australia, the late Mr. J. J. Poynton; since the latter's death the office has been in abeyance and the administration of the company's affairs in Australia has been in the hands of Mr. H. B. Jackson, its Local Director.

We regret to record the death of Mr. C. T. Hurry Riches, M.I.Mech.E., who was Divisional Locomotive, Carriage & Wagon Superintendent, Cardiff Valleys Division, G.W.R., from 1922 until his retirement in 1939.

Mr. W. Davis, District Goods Manager, Swansea, G.W.R., who, as recorded in our July 30 issue, is retiring on September 5, entered the service of the company at Birmingham in 1901; and later he was transferred to the Chief Goods Manager's Office at Paddington, where he was attached to the section dealing with Parliamentary and other special matters. In 1912 he was promoted to control this section, and in 1916 took charge temporarily of the goods sta-

**Mr. W. Davis**District Goods Manager, Swansea, G.W.R.,
1928-43

tions at Chippenham, Oxford, and Slough. In January, 1920, Mr. Davis was made Chief General Clerk in the Chief Goods Manager's Office, and in September, 1921, was raised to the position of Chief Clerk. In February, 1927, he became District Goods Manager at Worcester, and in July of the next year was appointed District Goods Manager at Swansea, during his tenure of which office he has been associated with many outstanding developments in the south and west of Wales, particularly in connection with the war effort. He was added to the list of magistrates for the County Borough of Swansea in 1939.

Mr. A. H. Madden, District Locomotive Superintendent, Accrington, L.M.S.R., who, as recorded in our August 20 issue, has been appointed Assistant to Operating Manager (Motive Power), Glasgow, served his apprenticeship in the shops of the Northern Counties Committee at Belfast from 1920 to 1925, and for the next two

**Mr. J. H. Hunter**Solicitor & Rating Agent (Scotland),
L.N.E.R., 1938-43

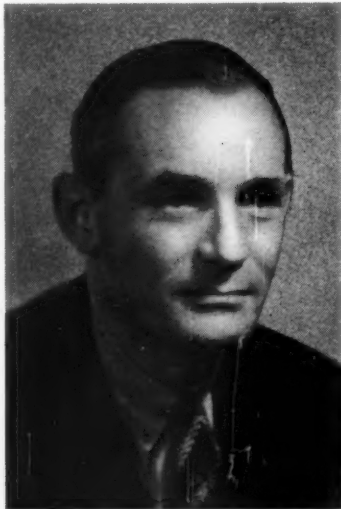
years was employed in the Drawing Office and Running Department. In 1927 he became an improver on probation, and two years later went to Hellifield Motive Power Depot as Running Shed Foreman. In 1931 he was made Head Office Mechanical Inspector at Derby and held this position for three years, during which period he was employed also on relief duties on the Midland Division. Mr. Madden was Assistant in the Office of the Divisional Superintendent of Operation, first at Manchester (from 1935 to 1939), and then at Crewe (from 1939 to 1940), when he was appointed District Locomotive Superintendent, Bank Hall. He became District Locomotive Superintendent, Accrington, in November, 1941. Mr. Madden takes up his new appointment on September 1.

Mr. James H. Hunter, Solicitor & Rating Agent (Scotland), L.N.E.R., who, as recorded in our August 13 issue, is

**Mr. T. Anderson**Appointed Acting Solicitor (Scotland),
L.N.E.R.

retiring on September 30, joined the staff of the Solicitor's Department of the former North British Railway Company in 1903. After passing through various branches, in 1918 he became Assistant in charge of the Conveyancing Department, and in 1924 he became Chief Assistant to the Solicitor for Scotland. He took up the appointment from which he is now retiring in 1938.

Mr. T. Anderson, who, as recorded in our August 13 issue, has been appointed Acting Solicitor (Scotland), L.N.E.R., as from October 1, entered the service of the former North British Railway as a probationer at Granton Passenger Station in 1903. Later in that year he was transferred to the Sack Superintendent's Department as a junior clerk; he became a clerk in the Goods Department, Waverley Station, in 1906, and in a similar capacity entered the Solicitor's Department, under the late Mr. James Watson, two years

**Mr. A. H. Madden**Appointed Assistant to Operating Manager
(Motive Power), Glasgow, L.M.S.R.**Mr. G. G. D. Ramoni**Appointed General Assistant to General Manager,
Central Argentine Railway**Mr. A. Moss**Appointed Assistant to Engineer (Signals),
London, L.N.E.R.

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later. He served with the Armed Forces from 1915-17, and was invalided in September of the latter year on account of wounds. In May, 1920, he qualified as Law Agent, and subsequently obtained varied experience in the Solicitor's Department. On the amalgamation in 1923, he was in charge of workmen's compensation, but a year later he took charge of Sheriff Court and associated work. In 1939, Mr. Anderson took charge of work in Court of Session.

Mr. G. G. D. Ramoni, Chief of the Publicity Department, Central Argentine Railway, who, as recorded in our May 7 issue, has been appointed General Assistant to the General Manager, entered the London Office of the company in 1916. After demobilisation from the Armed Forces, he arrived in Argentina in 1920, and took up duty in the Traffic Department of the railway in Buenos Aires. In 1923 he was transferred to the Statistics Department, in charge of the Operations Statistics Section. In 1926 he was appointed Assistant to the Chief of the Statistics Department; and in 1934 he became Chief of the Publicity Department. Under his direction, advertising and publicity have been carried on according to the most up-to-date lines. Mr. Ramoni was Vice-President of the Argentine Advertising Managers' Association from 1939 to 1941, and is the representative of the Central Argentine Railway on the advisory panel of the National Tourist Board.

Mr. A. Moss, Signal & Telegraph Engineer, Edinburgh, L.N.E.R., who, as recorded in our August 13 issue, has been appointed Assistant to Engineer (Signals), London, gained his early experience in the Signalling Department of the former Great Central Railway. He was actively associated with the many mechanical-power, track-circuiting, and colour-light signalling schemes carried out on that system. During the war of 1914-19 he served with the Royal Engineers (Signals), and was engaged on the construction and maintenance of lines of communication. After the grouping of the railways, Mr. Moss was transferred to the L.N.E.R. Signal Engineer's office at Liverpool Street, where, in 1926, he was appointed Indoor Assistant. This position he vacated in May, 1931, to take up the appointment of Chief Assistant (Signals) to the Engineer (Scotland). In April, 1933, he became Signal & Telegraph Assistant to the Engineer (Scotland), from which position he was promoted to be Signal & Telegraph Engineer, Scottish Area, in June, 1936.

Sir William Cayzer, and Mr. A. C. Morrell, M.C., who are members of the Mersey Docks & Harbour Board, have been elected to the board of Martins Bank Limited.

We regret to record the death on July 8, at the age of 64, of Mr. E. P. Mallory, Executive Assistant to the Chairman & President, Canadian National Railways. He began his railway career in 1896; three years later he joined the Royal Canadian Dragoons and served in South Africa, where subsequently he was transferred to military railway duty at Johannesburg. He remained in South Africa, on railway service, until 1908, when he returned to Canada and joined the former Canadian Northern Railway, serving in the Operating and Construction Departments. After the amalgamation which led to the establishment

of the Canadian National Railways, Mr. Mallory developed the system of operating-control statistics which is in use today; and in 1923 he was appointed Director of the Bureau of Statistics. In 1934 he became Assistant to the President, and, in 1936, Executive Assistant to the President.

GREAT SOUTHERN RAILWAYS (EIRE)

Mr. Randolph Stewart, Manager of the Road Freight Department, Great Southern Railways, has retired. He is succeeded by Mr. John C. Dooley, formerly Managing Director of John Dooley & Sons Ltd., Carriers.

We regret to record the sudden death on August 11, at the age of 69, of Mr. John Glennie McKeddie, formerly Superintendent Engineer of the L.N.E.R. Marine Department at Craigendoran. He retired in 1938.

CANADIAN PACIFIC RAILWAY

Mr. E. A. Leslie, Comptroller, Canadian Pacific Railway, has been appointed to the newly-created position of Vice-President & Comptroller.

Lt.-Colonel C. R. S. Harris, who is a Director of the Argentine North Eastern, Entre Rios, and Central Uruguay Railway Companies, has been appointed Custodian of Enemy Property in the Finance Division, Allied Military Government in Sicily.

Lt.-Colonel the Rt. Hon. Lord Brabazon, M.C., who is a Director of the Associated Equipment Co. Ltd., and of Thomas Tilling Limited, and who was Minister of Transport, 1940-41, and Sir Alexander Dunbar, who is a Director of the English Steel Corporation Limited, and of Vickers-Armstrongs Limited, have been elected Directors of David Brown & Sons (Huddersfield) Ltd. Lord Brabazon becomes Chairman.

Mr. E. S. Shrapnell-Smith, who is a Director of the Aldershot & District Traction Co. Ltd., and of the East Kent Road Car Co. Ltd., has joined the boards of the Eastwood group of companies, and has agreed to act as Chairman.

Mr. W. Guy Ropner, Deputy-Director of Ship Management, Ministry of War Transport, is to represent the Ministry in Canada, in succession to Mr. W. H. Lock, who, as recorded in our July 16 issue, lost his life in the recent flying-boat accident at Gibraltar.

PUBLIC TRANSPORT ASSOCIATION

The full council of the Public Transport Association is as follows:—

W. Alexander, Jr.	R. I. H. Longman
R. Beveridge	W. G. Marks
R. W. Birch	B. S. Murphy
J. M. Calder	Colonel Sir Joseph Nall
G. Cardwell	W. C. Percival
O. H. Corbie	R. E. Pitcher
F. C. A. Coventry	O. C. Power
B. H. Davies	A. T. Priddle
A. G. Dennis	H. G. N. Read
S. Dudman	W. Robinson
E. H. Edwards	G. Stratton
C. W. G. Elliff	C. R. Tattam
S. E. Garcke	E. L. Taylor
S. R. Geary	T. E. Thomas
W. E. Guy	J. H. Watts
B. Hall	J. S. Willis
S. Kennedy	

Unless otherwise determined by a general meeting, the number of the members of the council is to be not more than 33 nor less than 16; it will be noticed that there are at present the full 33.

The first officers of the association were recorded in our July 2 issue, page 27.

CANADIAN NATIONAL RAILWAYS

Mr. W. H. Kyle has been appointed Superintendent, Montreal Terminals & St. Jerome Division, Canadian National Railways. Mr. Kyle has been Acting Superintendent of the Montreal Terminals since last October, and his new position will include jurisdiction over the new terminal station.

CENTRAL ARGENTINE RAILWAY

Mr. A. E. Milner has been appointed Assistant to the General Manager's Commercial & Tariff Representative. Señor Juan H. Miotti has been made Chief of the Commercial Section; and Mr. A. Lowe, Chief of the Rates Section.

The Argentine Government has issued a Decree appointing Dr. Octavio R. Amadeo President of the National Transport Co-ordination Committee. The Decree provides that the President shall propose, as soon as possible, the reforms he considers should be introduced in respect of the National Transport Co-ordination Law (No. 12,346).

Mr. Neville George Flawn, Solicitor in the Chief Legal Adviser's Department, L.N.E.R., who retired on August 14, started his connection with railways in 1906, when he joined the former North Eastern Railway as Junior Solicitor at York. In 1908 he left that company's service to take up private practice, but in 1912 he joined the then Great Central Railway. From 1916 to 1918 Mr. Flawn served overseas as an officer with the Royal Artillery, and subsequently for a short period as a legal adviser to the Ministry of Food. On returning to the railway service, he had much to do with the negotiations consequent on the amalgamation of 1923. Since then he has specialised in work in connection with the Workmen's Compensation Acts, and has become an able exponent of this branch of the law. Mr. Flawn is well-known throughout the L.N.E.R., which has benefited by his energy and sound knowledge. He is a graduate with honours in Law of Cambridge University, where he was at Trinity Hall.

Mr. H. Huber, Assistant to the Chief Engineer for Traction, Swiss Federal Railways, has been appointed to succeed Mr. W. Müller, who retired on June 30, as Chief of the Traction & Workshops Division. Mr. Müller, who is well known as an expert on braking questions, has seen 41 years' service with the Federal Railways system or its constituents. He was Chief Engineer for Traction of the former 5th Division at Lucerne from 1915 to 1923; and he was concerned intimately with the introduction of electric traction on the Gotthard route.

We regret to record the death, on August 15, of Mr. C. B. Gee, B.Sc., M.I.E.E., Traction Motor Designer, Crompton Parkinson Limited, Chelmsford. After graduating at Manchester University, where he studied under Professor Miles Walker, Mr. Gee served in the war of 1914-19; after experience with various companies, he joined the English Electric Co. Ltd. in 1920. Two years later he joined the Traction Department of that company at Preston, as assistant to Mr. G. Zweigbergk. Mr. Gee joined the Traction Motor Department of Crompton Parkinson Limited, Chelmsford, again as Mr. Zweigbergk's assistant, on its formation in 1931; and in 1937, on the latter's retirement, he succeeded him as chief traction designer.

TRANSPORT SERVICES AND THE WAR—204

Fire Prevention on Railways

The British railways have in operation 3,971 fire prevention schemes at their premises throughout the country.

Clocks for Transport Workers

Alarm clocks received in this country from Canada and the U.S.A. are to be sold through normal trading channels, but only to holders of buying permits. The first issue of these permits will be made to workers in the railway and passenger road transport industries. By arrangement with the Board of Trade, permits are to be distributed through the appropriate trade unions. The retail price of these alarm clocks will be 16s. 9d.

Carriage of Goods by Road

The Ministry of War Transport has issued the following official statement: "A number of applications have been made to the Minister and to controlled undertakings for interpretation of the Conditions of Carriage under which goods are accepted for transport by vehicles in the Road Haulage Organisation. These conditions are part of the contract between customer and carrier and the determination of the extent of the liability of the parties is one for the Courts. Carriers should, therefore, refer customers making inquiries of this nature to their legal advisers." We refer to this in an editorial note, page 197.

Maximum Locomotive User

Much ingenuity is being shown by railway operating staffs in arranging the most intensive use of locomotives, and the following example has been quoted recently by the Railway Executive Committee. A large mixed-traffic engine at a London depot used extensively for main-line trains in peacetime, made a trip of 70 miles with a train of 700 tons. Its return was rostered with a train of vans in the evening, but a special train of war traffic was required, necessitating an immediate further journey of 80 miles and 20 miles to a locomotive depot, which was reached at midnight. Another war special train entailed a further run of 80 miles, when it was necessary to use the engine for a further 90 miles. By this time the engine was 200 miles from its

original depot. During the evening it started on another special freight train towards London, and arrived at a different London depot. A call was made for engine power for a troop special, which this locomotive again hauled, and then returned within a few hours with yet another troop special, adding 180 miles to its journeys. After eight days of almost continuous running, this locomotive worked its way back to its parent depot. Relief enginemens had taken over the controls at intervals during this week of hard work.

Travel to and from Northern Ireland

By reason of the heavy demand for sailing tickets on the steamship services between Great Britain and Northern Ireland, the sailing ticket system, which was to have ended on August 31 will be maintained until further notice. This applies to the following routes:—

Glasgow—Belfast
Stranraer—Larne
Heysham—Belfast
Liverpool—Belfast

Information as to where the sailing tickets may be obtained will be given on request at the stations and offices of the L.M.S.R. and the Irish cross-channel steamship companies.

The Mayo Pooling Scheme

A system of goods transport control and reorganisation, based mainly on control of petrol supplies, is to be introduced over a large section of Eire in the near future. Results of the North Mayo control scheme, introduced experimentally on December 7 last under an Emergency Powers Order, and administered by the road freight section of the Great Southern Railways Company, are said to have proved so successful that the reorganisation principle, with some slight modification, was extended in February last to South Mayo and West Galway. It is now intended to include the counties of Sligo, Roscommon, and East Galway.

Although the North Mayo scheme (to which our most recent reference was in our February 12 issue, page 174) was operated originally on the permit system under the Emergency Powers Order, it now conforms to the method adopted in

the newly-included areas, which is based on the control of petrol supplies. With a continuance of "abnormal conditions" (Eire is not at war), the principle of control is likely to be extended gradually to other parts of the country, until eventually it will cover all the 26 counties of Eire as "a purely emergency plan for the conservation of petrol and tyres and the maintenance of a reasonably efficient standard of transport during a period of stress."

As it is no longer necessary to schedule the North Mayo area for this purpose, nor to apply any particular conditions to transport there, the Minister for Supplies has revoked his Scheduling Order. This, however, involves no change of policy or, in fact, method, except that the restriction on the use of private commercial goods vehicles fitted with gas-producer plants has been removed, and all such vehicles will be permitted to operate for the owner's private business under the same conditions as apply generally throughout the country. As heretofore, the public goods transport services will be carried on by the Great Southern Railways in all the areas, and licensed hauliers will be continued, but no alteration will be made in the existing practice regarding petrol-driven private commercial goods vehicles. The extension of the scheme will mean, of course, that a number of privately-operated vehicles will be immobilised.

"The Busman's Malta"

Bus companies in many parts of Great Britain have had to operate under "action" conditions for long or short periods, in some cases continuously and in others intermittently. There is only one part of the country, however, that has been continuously in the front line for three years, and that is the coastal region of Kent, served by the buses of the East Kent Road Car Co. Ltd., an associate of the Southern Railway and one of the B.E.T. group. The collapse of France brought German guns within 20 miles of the Kent Coast, and the nearest enemy aerodromes but little further away. The area containing Margate, Dover, Folkestone, and Canterbury is thus liable to sudden attack from the air, and, in the vicinity of Dover, to shelling. This is the area sometimes called "the Busman's Malta," and it contains the noteworthy stretch of coastal road between Dover and Ramsgate which bus drivers call "the loveliest bit of road in England." On it the buses are operated at the discretion of the drivers, regardless of the schedule, as it cannot be predicted when German raiders may swoop out of the clouds. One driver has said that, until lately, "you never knew when you were going to look out of the cab and see a yellow-nosed plane flying alongside with a couple of Jerries looking at you."

The East Kent Road Car Company was formed in 1916, during, and as a result of, the war of 1914-19, and its silver jubilee found the company the only one in England running its bus services under conditions of permanent emergency. Already some indication of this has been given in our columns from time to time, but it is only now that further details have been released. In December, 1940, the company held its annual meeting in Maidstone—the first public indication of the unusual conditions—and mention of some of the operating difficulties was made in our issue of December 27, 1940 (page 667). By the end of 1941 the meeting could be held again in Canterbury, and a brief account of the company's position



Mrs. Violet Porter, a former cook, with her assistant (previously a housemaid), now work at Salisbury on the diesel bus engines of the Wilts & Dorset Motor Services Limited, an associate of the Southern Railway and one of the Tilling group. Mrs. Porter gives trainee soldiers a six-week course on the maintenance and adjustment of engine fuel pumps. She began as a conductress, and, after training in the company's own diesel pump shops, went to the engine makers in Manchester for a specialised course. She is believed to be the first woman in England to do such work.

at that time was given in our issue of January 23, 1942 (page 126). During the evacuation from Dunkerque, the buses worked night and day for many days carrying tired men from the beaches; tens of thousands of men were brought back from the sea in three days. This is but one of many services to the national effort made by East Kent buses, but all the story cannot yet be told. In addition to mobile bus stop and queue signs, Dover has its "shell warning" boards with intimation of where emergency loading points are placed.

Nearly all the company's garages have been damaged by enemy action, and three have been destroyed. One bombed-out garage is at Deal. It was built in 1908 and was the first headquarters of one of the constituents of the present company. During the last war it was damaged by a Zeppelin bomb. Three of the offices have been hit, including the head offices of the company in Canterbury, and the main office in Dover. A couple of double-deck buses have been turned into mobile offices, and one now forms the Dover local office. Another bus has become a mobile canteen in Dover. The company's registered office has been moved to Warberry House, Bishop's Down, Tunbridge Wells; the Secretary's office is at Robin Hood, Charing; and the traffic headquarters are at Alcroft Grange, near Canterbury. On duty, 15 bus conductors and conductresses have been killed, and thrice as many wounded by shell fire, bombs, and machine gun bullets on the road. When the company offered to evacuate to an inland village the staff living at Dover, 79 out of 81 declined. The company maintains its own Home Guard, consisting of two complete transport companies which include 130 vehicles and complete staff of riflemen, grenadiers, motor cyclists, cooks, ambulance men, and nurses. It is known as the East Kent Transport Column.

New Russian Mineral Railway

A mineral railway is being laid between Cheliabinsk and Kopeisk (a coal mining centre ten miles to the east), to connect the regional centre with the coal town. The inhabitants of Cheliabinsk and Kopeisk are organising regular campaigns of voluntary Sunday work to build the line; 4,000 persons from Kopeisk participated on the first Sunday. On the second Sunday of voluntary work almost 10,000 persons turned out, including students, metal workers, and housewives, according to the *Soviet Monitor*.

Railway Construction in Turkey

Substantial progress seems to have been made recently with the two new lines of the Turkish State Railways extending respectively from Diarbekir, through Bismil and Cizra, to the frontier of Iraq; and from Mamuret el Aziz, through Palu, Karpahur, Mush, and Van, to the Persian frontier.

Announcement has been made by the Paris radio that the line through to Iraq was opened on July 1, and this seems to substantiate the information we have received from Switzerland stating that the section between Kurtalan (the previous railhead), through Cizre, to the frontier of Iraq has been completed. It seems unlikely that all the associated works are yet finished. The new railway bridge spanning the River Batman (a tributary of the River Tigris) to the east of Diarbekir, was opened on June 28. This bridge was begun in 1940, and was intended originally to be a steel structure, but, by reason of the impossibility of importing the necessary materials, it was completed in reinforced concrete. The bridge is 500 metres (1,630 ft.) in

length, and its total cost is stated to have amounted to £T.1,100,000.

On the railway to the Persian frontier, it seems that there are still some works uncompleted on the 70-km. (43½-mile) section between Mamuret el Aziz and Palu, although this has carried traffic for more than a year. The 64-km. (40-mile) section thence to Karpahur is also open, but unfinished. The next 62 miles, to Mush, is being built; and the remainder, through Van to the Persian frontier, is under survey.

Turkey and Balkan Traffic

Through goods rates in respect of the Bulgaro-Turkish goods traffic between Bulgaria and Turkey were introduced on June 1. From the same date, also, through goods rates were applied in respect of consignments from Turkey to Roumania, via Bulgaria, and *vice-versa*. For consignments from Turkey to Roumania the freight relating to the Turkish section has to be paid by the consignor, while the freight covering the Bulgarian and Roumanian sections must be paid by the consignee. In the reverse direction freight in respect of the Roumanian section is payable by the consignor, while the part referring to the Bulgarian transit section and to the Turkish section is to be paid for in Turkey. Additional expenses, originating *en route*, must be recovered from the consignee. Through bills of lading must be used, but the application of the through Turkish-Bulgarian rates for consignments between Turkey and Roumania, and *vice-versa*, must be requested specially by the consignor on the bill of lading.

Swiss Air-Line Curtailment

Swissair discontinued its daily air service between Zürich and Berlin some weeks ago, but still maintains the Zurich-Stuttgart route.

Rail Traffic in Northern Italy

Information about disruption to rail communications in Northern Italy, and between Italy and Switzerland, is obscure and, to some extent, conflicting. This is not surprising in view of the fact that the situation is probably changing from day to day, and even from hour to hour, as a result of the political situation, and also of the devastating effect of Allied air raids on the great centres of Milan and Turin. At the beginning of August, a statement was circulated that the German-Italian transit traffic through Switzerland had been suspended. A Geneva message on August 2 denied this and said that it had been neither stopped nor curtailed since the previous week when the fall of Mussolini gave currency to the rumours.

On August 10 a Swiss radio statement said that numerous railway services had been suspended on the lines between Turin, Milan, and Venice; Piacenza and Voghera; and Piacenza and Cremona. A message from Zürich dated August 11, quoted the Italian newspaper *La Stampa* for the statement that the express train service between Milan and Turin has been suspended.

Moscow Radio, quoting reports from Berne, said, on August 14, that Italian railway workers on the Verona-Munich and Venice-Vienna lines had gone on strike to prevent machinery, material, raw materials, and stocks being transported to Austria and Germany. They had uncoupled trains and scattered wagons. German railwaymen had arrived in Verona from Klagenfurt, Austria.

Telegraphic communication between Switzerland and Italy has been interrupted but was resumed on August 19, although on that date a Geneva message said that telephonic communication was still being diverted through Berlin. The same mes-

sage said that the goods train service had been resumed between the Swiss border and Como, but that the passenger traffic was irregular; for the first time the Rome Express to the frontier had been stopped.

Food Transport to Calcutta

Sir Edward Benthall, Member for War Transport on the Viceroy of India's Executive Council, who recently paid a two-day visit to Calcutta, said on August 19 that, so far as he could ascertain, supplies of food grains reaching Calcutta were adequate for the population. However, there was no margin, and he said he would do his best to secure regularity in the transport of supplies. If the authorities were able to maintain their programme of sending 190 railway wagons of food grains and other food supplies to Calcutta every day, it would be possible to give adequate nutrition on a full diet of 2½ lb. daily to more than 3,000,000 persons (the normal population of Calcutta is just over 2,000,000), without taking account of the foodstuffs available in Bengal, or other imports.

Chinese Railway Rehabilitation

U.S.A. estimates indicate that 3,000 locomotives, 53,000 goods wagons, 6,000 passenger carriages, and large supplies of sleepers, will be required for the post-war rehabilitation of the railways in China, Formosa, Korea, and Manchuria. Sleepers are available locally. In addition to the rehabilitation of existing lines, China will probably wish to build some 12,500 miles of new railway during the immediate post-war period. Fully two-thirds of the materials needed for this undertaking, such as bridgework, track, rolling stock, signals telegraph equipment, etc., will have to be purchased abroad.

Transport in the Philippines

The recent intensification of the war in the Pacific Zone gives added interest to the transport situation in the Philippine Islands. These islands, ceded by Spain to the U.S.A. by the peace treaty between the two countries on April 11, 1899, form the largest island group of the Malay Archipelago. They extend almost due north and south from Formosa to Borneo, and a glance at a map of the area reveals their strategic importance. The Japanese attacked the Philippine Islands on December 10, 1941; captured Manila on January 2, 1942; and occupied the entire archipelago by April 10, 1942. There are substantial railway and road systems on the main islands, of which the principal is Luzon. The total length of roads is 14,235 miles, and on January 1, 1941, there were 33,898 motorcars and 20,236 motor lorries registered. At the beginning of 1941, the Government-owned Manila Railroad Company had in service 712 miles of main line on the island of Luzon, and the privately-owned Philippine Railway Company 132 miles on Panay and Cebu.

The first steam railway on Luzon was opened for commercial operation between Manila and Dagupan, a distance of 121 miles, in 1892. It was built and owned by a British company, the Manila Railway Co. Ltd., which was afterwards reconstructed as the Manila Railway Co. (1906) Ltd. to hold the securities of the Manila Railroad Company of New Jersey. During the period from 1903 to 1914 many additional lines were built, both north and south of Manila. Early in 1917 ownership of the property was acquired by the Philippine Government by the purchase of the entire capital stock of the company. Working has continued under the title of the Manila Railroad Company, incorporated in the Philippine Islands on March 10, 1919. For a long time, the main system of lines

around Manila was not connected with Legaspi, as there was a gap between Aloneros and Pamplona which has been bridged only in recent years. The railways are of 3 ft. 6 in. gauge, and the rolling stock consists of 159 locomotives, 373 passenger carriages, and 2,233 goods and service vehicles. The railways were partly destroyed by the American troops before they were compelled to leave the island, and since then various contradictory statements about rehabilitation have been made by the Japanese. It would seem that the section between Manila and Batangas (about 70 miles) was reopened on July 1, 1942, and that from Manila to Calumpit (about 35 miles) on July 2. The Japanese military command in Malaya announced

the reopening of the line through to the northern railroad of San Fernando on July 21, 1942, and said that this amounted to complete restoration of the island's rail services, but later information suggests that the main line to Legaspi remained closed. In fact, the Japanese subsequently announced the opening in March, 1943, of the Legaspi main line, "and two other railways, thus completing 97 per cent. of the railway network in the islands." At the same time, they claimed to have built a 64-mile line in La Union Province, connecting the railroad of the northern main line at San Fernando with Sudipen; this is intended to serve the Mankayan copper mine.

The Philippine Railway Company was incorporated in Connecticut on March 5, 1906. It has railways on the islands of Panay (where the 72 miles between Iloilo and Capiz have been built, out of 100 miles authorised), and Cebu (where the 60 miles between Danas and Argao have been built, out of 95 authorised). Although the Philippine Railway has but 132 miles of line opened, its powers of construction cover a total of 295 route miles, including 100 miles on the island of Negros, of which none is built. The gauge is 3 ft. 6 in., and the rolling stock consists of 18 steam locomotives, 53 carriages, 346 goods wagons, 19 petrol railcars, and 42 railcar trailers.

There is also a short railway on the island of Mindoro, which is said to have been damaged by the withdrawing Americans, and to have been reopened by the Japanese on July 21, 1942.



The railways of the Philippines, with insert, showing the strategic relationship of these islands to the east coast of Asia, Borneo, and Formosa

Research Work of the Locomotive Institute

In connection with the appointment (recorded in our July 16 issue) of Mr. Lawford Fry as Director of Research of the Locomotive Institute, New York City, it is opportune briefly to review the recent work of that body. For some years the institute has been carrying on intensive studies in connection with steam-locomotive design and performance through a committee of its technical representatives. Many subjects have been handled, and many methods adopted, all with the object of improving performance, reducing maintenance costs, and providing greater reliability and efficiency on the part of the locomotive. Positive and advantageous results have accrued from these activities. The necessary contribution to the war effort of all the locomotive builders has limited, to a certain extent, the time available to their technical staffs for steady prosecution of these studies. As the work being done daily by the railways of the country in the handling of war materials, troops, and supplies is due, no doubt, in large measure to the institute's locomotive inventory, it has decided that, for the steam locomotive to maintain its position as the mainstay of railway transport throughout the world, the studies already started must be carried on without loss of time; and recently it has set up an organisation to handle the work.

The time of Mr. Lawford Fry as Director of Research will be devoted to research work in connection with locomotive design, under the jurisdiction of the Technical Committee of the institute. Studies under way in connection with motive power will be accelerated, and a thorough investigation will be made of recent accomplishments which have resulted already in bringing the performance of the steam locomotive to a point where yearly mileages are more than double those of a few years ago. Mr. Fry will be assisted in his work by the technical experts of the locomotive builders.

Staff and Labour Matters

London Transport Aircraft Workers

The National Arbitration Tribunal recently dealt with a claim made by the Association of Engineering & Shipbuilding Draughtsmen for certain workpeople employed by the London Passenger Transport Board (London Aircraft Production) to be paid compensation in lieu of lost holidays in 1941 and 1942. The days to which the claim relates are Easter Eve, Whitsun Eve, August Saturday, and one day's holiday at Christmas.

The award of the tribunal states that representatives of the parties were heard at a sitting of the tribunal held in London July 20, 1943. Statements were made and documents submitted as to: The number of workers affected; the work in which London Aircraft Production is engaged and its relationship to the London Passenger Transport Board's transport undertaking; the staff regulations of the transport board as to public holidays for the general clerical and technical classes of employees and their application to the employees of London Aircraft Production; the position as respects public holidays since Whitsun, 1940, as to leave actually allowed at the holiday and payment made or time off in lieu which was granted where staffs were on duty at the holiday; an arrangement entered into in 1940 by the Eng-

neering & Allied Employers' National Federation (of which London Aircraft Production is not a member) and the Association of Engineering & Shipbuilding Draughtsmen, whereby draughtsmen entitled by custom or practice or as a condition of their employment to certain holidays with pay during the year should, if they had not received all such holidays by the end of the year, receive payment at the rate of single-time in respect of any balance of holidays not taken; the renewal of this arrangement with slight modification, in 1941; the absence of any provision in the transport board's regulations for alternative leave with pay or payment in lieu, in respect of Saturday mornings preceding Bank Holidays, and the absence of any practice of granting such leave or compensatory payment; and the absence of any claim, on the part of the organisation representing the majority of the general clerical and technical classes of employees of the transport board, for compensation in lieu of lost holidays on Saturdays.

The tribunal awarded against the claim.

Air Lines in Argentina

On more than one occasion recently we have directed attention to the great distances between important points in Argentina, and the substantial opportunities provided to air transport to reduce travel time. In particular, it may be recalled that we discussed this subject at some length in our issue of April 16 & 23 (pages 400-401) in relation to the effect of air transport developments on the railways of Argentina.

Every republic of South America, with the exception of Paraguay, has one or more domestic air lines, but Argentina, with four domestic and four inter-regional systems, ranks third among the countries of the southern continent in route mileage of air service, which totals 5,604.

During 1942, civil aviation operations showed a substantial increase in both distance flown and weight of express goods carried. The principal figures are as follow:—

	1941	1942
Km. flown	2,110,345	2,247,335
Hours flown	9,148	9,627
No. of journeys	5,138	4,488
No. of passengers	55,093	55,014
Kg. of mail	108,546	78,968
Kg. of express	143,978	210,518

The distance flown, and flight hours, refer only to Argentine territory.

Among the companies operating air lines in Argentina are the Aeroposta Argentina (Aeroposta); Corporación Sudamericana de Servicios Aéreos (Corporación); Líneas Aéreas del Estado (LASO); Sociedad Argentina de Navegación (SANA); Pan American Airways (PAA); and Pan American-Grace Airways (PANAGRA). Buenos Aires has connections also with Montevideo through the Compañía Aeronáutica Uruguaya (CAUSA), and with Porto Alegre by the Serviços Aéreos Cruzeiro do Sul.

Pan American Airways also has a direct route north to Asunción, the capital of Paraguay. Buenos Aires is the terminus for the east-and-north route of Pan American Airways and the west-and-north route of Pan American-Grace Airways to United States airports.

The air line of the Aeroposta Argentina S.A. began operations as early as 1931 under the guidance of the Compagnie Générale Aéropostale. The Syndicato Condor took over the controlling interest later, but today Aeroposta is officially an Argentine concern, and its operations are confined to that country.

Routes are now operating from Buenos Aires along the east coast, touching Bahía Blanca, Carmen de Patagones, Trelew, Comodoro Rivadavia, Puerto Deseado, San Julian, Santa Cruz, Rio Gallegos, Rio Grande—a route of 1,583 miles, with services twice weekly.

Italian financiers with aeronautical interests formed the Corporación Sud Americana de Servicios Aéreos in 1939. Today this line is officially classified as an Argentine company with a Government subsidy and local capital. The operating personnel is Argentine. In 1941 it opened a new service from Buenos Aires up the River Parana, via Santa Fe and Corrientes, and up the River Paraguay to Asunción (Paraguay). Routes now operating are Buenos Aires to Montevideo, 125 miles, four services weekly; and Buenos Aires to Santa Fe, Barranqueros, Formosa and Asunción, 735 miles, two services weekly. The corporation has its own passenger terminal at the airport in Buenos Aires.

The Líneas Aéreas del Estado (LASO) began operations in 1940 in Argentine territory only; it maintains a 960-mile weekly service from Buenos Aires to Santa Rosa, Neuquen, Bariloche, and Esquel.

The Sociedad Argentina de Navegación Aérea (SANA) was formed in June, 1940, to provide a scheduled service between Buenos Aires and Colonia (Uruguay) across the River Plate, and now maintains a daily (except Sunday) service over this 35-mile route.

The activities of several other companies—Italian, German, and French—have been discontinued or absorbed by the Argentine Government.

Two daily air services are in operation by Pan American Airways between the United States and Argentina, carrying mail, cargo, and passengers. For example, an aeroplane of the Pan American Airways leaves Buenos Aires on Wednesday morning at 7 a.m., and arrives in New York on Sunday at 5.45 p.m., via the eastern coast line of Brazil, requiring 4 days, 10 hours, and 45 minutes. A Pan American-Grace aircraft leaves Buenos Aires at 8 a.m. on Wednesday morning, operating by way of the west coast of South America, and takes only about 1 hour longer to reach New York than with the east-coast route. Both of these schedules are for day flying only, and four overnight stops are made; night flying is intended in the near future. From Buenos Aires to Rio de Janeiro (Brazil) is a flight of approximately 7 hours, compared with surface travel of 6 days.

Pan American-Grace Airways, in addition to the regular trunk-line service down the west coast of South America, inaugurated an extra passenger and mail service between Buenos Aires and the United States on September 6, 1942, via the Pacific coast. This service operates over a new route which links Buenos Aires with Cordoba, Tucuman, and Salta (all in Argentina), and with Antofagasta (Chile), proceeding northward with stops at the main cities en route. This provides a tri-weekly service between Buenos Aires and North Argentina over a trans-Andean route, to contribute to the development of traffic between Salta and Antofagasta and relieve traffic on the more southerly route between Santiago and Buenos Aires. At present, Pan American Airways has three arrivals and two departures daily at Buenos Aires.

Recently Pan American-Grace Airways inaugurated what has been termed the "longest commercial sky-freight line in the world," which extends from the Canal Zone to Buenos Aires, a distance of some 5,300 miles. While the intention was to keep this exclusively as a freight route comparable with that of cargo steamers,

passengers (as is the case with ocean transport) are not refused when space permits.

Pan American-Grace Airways is represented locally in Argentina by the Compañía de Aviación Pan American, an affiliate of Pan American Airways. Pan American-Grace operates a through service from Buenos Aires to Peru, north-westerly to Cordoba, Tucuman, Salta (all in Argentina), and northerly to Uyuni, Oruro, and La Paz (in Bolivia), to make international connections north to Balboa (Canal Zone).

Through services are provided from Argentina to Chile, extending from Buenos Aires to Cordoba and thence south-westerly to Mendoza and Santiago de Chile, whence the aircraft turns north to Antofagasta, Arica, Arequipa, Lima, and other ports and western stops en route to the Canal Zone.

Anglo-Egyptian Post-War Trade

Dealing with Anglo-Egyptian trade, the annual report for 1942 of the Anglo-Egyptian Chamber of Commerce stated that the council held firmly to its confidence in the future trade between the two countries. Egypt was one of the few countries whose national finances had improved during the war, and there could be no doubt as to the future demands from Egypt for foreign manufactured goods, although the trend of these goods might not be entirely in the same direction as before the war. The industrial development caused by the war might be reflected in a decreased demand for certain classes of goods, which Egypt could now supply from her own resources. This should be more than balanced by demands in other directions, notably in machinery, which had been working at full pressure with little or no opportunity for obtaining renewals. Stocks of all kinds had been depleted and would need replenishing. The question after the war would not be as to the demand from Egypt but the possibility of this or any other country meeting it in full.

Evidence of the interest taken by the Egyptian Government in post-war trade was shown by the formation of a General Economic Committee with eight sub-committees. The imports sub-committee had commenced work already under the chairmanship of the Minister of Finance. Recent speeches of prominent personalities in Egypt revealed confidence in the future of that country as a market for the whole of the Near and Middle East and as a centre of communications. Export trade in general would be of greater importance to the United Kingdom after the war than ever before. The council believed that British exporters would receive all encouragement and assistance as soon as thought could be diverted from hostilities.

The Egyptian Government had taken an interest in the exploitation of her mineral products. Rich iron ore deposits had been discovered and had been made more accessible by the completion of the railway from Kena, in the Nile Valley, to Safaga on the Red Sea. It was hoped that a market for Egyptian minerals may be found in the United Kingdom.

Statistics of imports into Egypt in 1942 showed that the United Kingdom had lost the place she had held for so long as Egypt's principal supplier. The Minister of Finance had pointed out that the statistics related to large quantities of goods imported for the use of Allied forces in Egyptian territory and their distribution as between civic and military needs not made known.

Notes and News

South African Railway Earnings.

Receipts of the South African Railways from July 11 to August 7 amounted to £3,522,247, compared with £3,215,998, for the corresponding period of 1942.

La Guaira & Caracas Railway Co. Ltd.

—Payment is announced of 2½ per cent. actual on the 5 per cent. debenture stock, less tax, being six months' interest due on March 1, 1940. The previous payment was made on June 1 for the six months to September 1, 1939.

Institute of Transport Sections.

Sir William Wood, President-elect of the Institute of Transport, has accepted invitations to visit the East Midlands Section of the Institute at Nottingham on November 26, and the Northern Section at Newcastle-on-Tyne on December 17.

New Spanish Railway Bridge.

The Spanish National Railways have completed, in three months, a new bridge over the Agueda River near Fuentes de Oñoro to replace the one which collapsed on December 21, 1942. The bridge carries the Salamanca-Lisbon (via Villar Formosa) main line, and is constructed of reinforced concrete. It consists of three arches, each about 270 ft. wide by about 50 ft. high. It was opened on April 1.

Dublin Bus Thefts Prevention.

—By a new method of filing crimes daily according to their type, the Dublin police have met with success in checking thefts of baggage from buses. For example, the *Irish Times* shows that recently reports were received from about forty people about such thefts. By filing these separately from other thefts, it was soon found that they were almost all on the buses from Kingsbridge about the time of arrival of the long-distance trains. A watch was kept on these buses and the thefts stopped.

Bus Companies and National Savings.

—Savings of the B.E.T. Group of Omnibus Companies during the three months ended June 30, 1943, totalled £67,113. Some average weekly savings figures for the June quarter are as follows:—

Company	Per employee		Per contributor	
	s.	d.	s.	d.
North Western	7	0	10	0
Maldstone	6	7	16	3
East Midland	6	10	11	4
Aldershot	5	1	9	9
Western Welsh	5	4	9	8
Ribble	4	0	13	5
Whole group	3	3	6	5

The total savings of the group to June 30 last were £332,187; the total number of employees in the group is 32,500.

Western Australian Railways Results.

—Financial results of the Western Australian Government Railways for the quarter ended March 31 last show earnings of £1,223,000, compared with £1,011,100 for the first three months of 1942; working expenses of £912,611, against £747,999; and net revenues of £310,389, against £263,101. Interest absorbed £257,400 (£258,200) and profit amounted to £52,989 (£4,901). The operating ratio was 74.62 per cent. compared with 73.98 per cent. for the first quarter of last year. Items which contributed to the higher working expenses were superannuation payments, war-damage insurance, higher wages and salary costs on account of increases in the basic wage, and the payment of payroll tax to the Commonwealth Government. The increased cost of materials, particularly fuel, was also an important factor. There have been no increases in rates or fares recently, and the higher earnings are therefore the result of the increased traffic handled. Results for

the nine months ended March 31 last compared with the nine-monthly period ended March 31, 1942, and 1941, respectively, were as follows:—

	Nine months ended March 31		
	1943	1942	1941
Earnings	3,363,400	2,990,900	2,655,100
Working expenses	2,539,462	2,235,257	2,067,376
Net revenue	823,938	755,643	587,724
Interest	772,700	774,000	771,400
Profit	51,238	18,357	183,676
Loss			

Swiss Tunnel Re-opened.—Traffic was resumed partially on July 15 through La Croix Tunnel, on the Delémont-Delle route, which had collapsed on February 7 last, as recorded in our issue of May 21. Early-morning and late-evening trains are not running for the time being, to enable work in the tunnel to be completed; traffic at these times is conveyed over the pass by buses. Reference to the tunnel was made also in our July 30 issue, page 108.

American Railway Air Rights.—The Burlington Transportation Company, a subsidiary of the Chicago, Burlington & Quincy Railroad, filed an application with the Civil Aeronautics Board on June 26, seeking authority to operate services in the area between Chicago, Kansas City (Mo.), Denver (Colo.), Billings (Mont.), and the Pacific Coast, contiguous to its present bus operations of 8,000 highway miles in 13 western States. The application requests authority to operate 6,380 route miles of air line.

American Bus Companies & Air Lines.

—The Greyhound Corporation, the parent company of the nation-wide Greyhound bus system, has applied to the Civil Aeronautics Board in the U.S.A. for a certificate for public convenience and necessity covering civil air lines for the transport of passengers, luggage, and light express, over 78 routes throughout the U.S.A. It is proposed that schedules should be co-ordinated with the bus operations of the Greyhound organisation, and that joint air and road through rates and fares should be arranged in conjunction with other operators willing to participate. The Greyhound Corporation at present owns no aircraft.

Metropolitan Graduate & Student Society Programme.

—Meetings have been arranged by the Metropolitan Graduate & Student Society, Institute of Transport, for 1943-44 on Saturdays at 2.15 p.m. as follows:—October 23, Address by the President of the Institute (Sir William Wood); November 20, "Railway Accounting and the Engineer's Department," by Mr. J. A. R. Turner; December 11, "Organising the Road Transport Industry," by Mr. C. F. Klapper; January 15, "Road Vehicles Destination Blinds—Some Problems of Design," by Mr. R. S. Turnbull; February 19, "Lighting in relation to Railways," by Mr. C. W. Herbert; March 18, "World Communications," by Mr. A. G. Course.

Anglo-Spanish Construction Co. Ltd.

—This company was formed in 1924 to build the Santander-Mediterranean Railway of 367 km., in which it holds 99 per cent. of the capital. This line was taken over by the State on February 1, 1941, under the law of January 24, 1941, which provided for the nationalisation of the Spanish broad-gauge railways. The amount due to the Santander company was agreed by the Spanish Government under date November 25, 1941, at 66,856,607 pesetas in respect of sums arising out of the construction and expropriation of the line. The statement issued with the report of the construction company for the year to

January 31, 1943, shows that since the period covered by the accounts some progress has been made in the liquidation of the Santander company, and that the construction company has had returned to it the exploitation deposit of 17,000,000 pesetas in 3 per cent. Spanish Government securities. This has made possible an initial distribution of 20 per cent. of the nominal amount of the ordinary capital.

Public-Utility Undertakings in Portugal.—Mr. A. N. Rye, Chairman of the Lisbon Electric Tramways Limited, in his statement circulated to shareholders with the report and accounts, referred to the

British and Irish Railway Stocks and Shares

Stocks	Highest 1942	Lowest 1942	Prices	
			Aug. 20, 1943	Rise/ Fall
G.W.R.				
Cons. Ord. ...	58	39	61½	— ½
5% Con. Pref. (1950) ...	115½	105½	111½	— ½
5% Rt. Charge ...	133½	123½	126½	—
5% Cons. Guar. ...	130½	121½	123½	—
4% Deb. ...	117	105	109	—
4½% Deb. ...	118	108	110½	—
4½% Deb. ...	125	113	118½	—
5% Deb. ...	137	127	129	—
2½% Deb. ...	77	70	75½	—
L.M.S.R.				
Ord. ...	28½	16½	32½	— ½
4% Pref. (1923) ...	63½	50½	62½	—
4% Pref. ...	76½	67½	75	—
5% Red. Pref. (1955) ...	103½	94½	103½	—
4% Guar. ...	104½	97½	100	—
4% Deb. ...	108½	101½	104½	—
5% Red. Deb. (1952) ...	111	107½	109½	—
L.N.E.R.				
5% Pref. Ord. ...	9½	2½	9½	— ½
Def. Ord. ...	5	1½	4½	—
4% First. Pref. ...	62	49½	62	—
5% Second. Pref. ...	32½	18½	33	— ½
5% Red. Pref. (1955) ...	95½	79	96½	—
4% First Guar. ...	98	88	97	— ½
4% Second Guar. ...	90	78	90	— ½
4% Deb. ...	85	76	80½	—
4% Deb. ...	106½	100½	103	—
5% Red. Deb. (1947) ...	106	103	104	—
4½% Sinking Fund Red. Deb. ...	106	102½	105½	—
SOUTHERN				
Pref. Ord. ...	77	61½	77½	— ½
Def. Ord. ...	23½	14½	25	— ½
5% Pref. ...	112½	104	110½	—
5% Red. Pref. (1964) ...	110½	105½	112½	—
5% Guar. Pref. ...	131	121½	123½	—
5% Red. Guar. Pref. (1957) ...	115½	109½	112½	— ½
4% Deb. ...	116	104½	108	—
5% Deb. ...	134	125½	129½	—
4% Red. Deb. (1962-67) ...	110½	106	107½	—
4% Red. Deb. (1970-80) ...	111	106½	107½	—
FORTH BRIDGE				
4% Deb. ...	109½	108	106	—
4% Guar. ...	105½	100	104½	—
L.P.T.B.				
4½% "A" ...	122½	111	117½	—
5% "A" ...	131½	122	127½	—
3% Guar. (1967-72) ...	95½	92½	99	—
5% "B" ...	121	111½	115½	—
5% "C" ...	56½	38	68	— 2
MERSEY				
Ord. ...	27½	20½	32	—
3% Perp. Pref. ...	61½	56½	61	—
4% Perp. Deb. ...	102½	99½	103	—
3% Perp. Deb. ...	80½	76	78	—
IRELAND BELFAST & C.D.				
Ord. ...	9	4	9	—
G. NORTHERN				
Ord. ...	29½	12½	19	+ 1½
G. SOUTHERN				
Ord. ...	25	10	10½	— ½
Pref. ...	29	12½	16½	+ ½
Guar. ...	53	35½	34	+ 2
Deb. ...	71½	55½	59½	+ 2½

§ ex-dividend

recent law for the nationalisation of companies operating public-utility undertakings in Portugal, reference to which was made in our July 30 issue. The company had been advised that the law did not become fully operative until after the issue of regulations which had not been published yet and it was not possible, therefore, to state to what extent the company would be affected.

London-Sweden Radio-Phototelegraph Service.—Cable & Wireless Limited announces the commencement of a radio-phototelegraph service between London and Sweden. The service will be open for the acceptance of photographs and black-and-white drawings.

Railway Enthusiasts in the Middle East.—We learn that nearly 500 members of the Railway Correspondence & Travel Society are now serving in H.M. Forces, and that a well-known London member has formed a branch in the Middle East which holds weekly meetings in Cairo.

Important New Road Bridge in Chile.—A bridge, costing 7,790,272 pesos, which had been under construction for approximately 7 years, was opened to traffic across the Bio-Bio River, near Concepcion (Chile) on May 15 last. It connects the Santiago-Concepcion highway with the Province of Arauco and points to the south.

Scinde Punjab & Delhi Railway Annuities.—The 786 miles of the Scinde, Punjab & Delhi Railway Company were purchased by the Government of India under the powers of an Act of 1886, which provided for the purchase by means of annuities, namely, Class "A" representing capital and interest, and Class "B." It is now notified that on June 30, 1943, a total sum of £3,752,235 was invested for the purpose of providing a sinking fund in respect of the Annuities Class "B."

Refrigerating Plant in Santiago.—The sum of 20,000,000 pesos has been allocated for the construction and installation of a refrigerating plant on property that has been acquired near the Central Station in Santiago de Chile, the southern railway terminus in that city. The scheme was projected in 1941 and the sum now allocated to the Council of the Corporación de Fomento de la Producción (Production Development Corporation) permits of early construction. The building is to be six storeys high, with a basement, and will have railway sidings needed for the operations.

Zagreb Railway Traffic.—The combined traffic of the Zagreb railway stations in 1942 has been announced recently as totalling 2,846,416 passengers, 244,720 metric tons of goods dispatched (excluding goods in transit), and 1,286,804 metric tons of goods received. In addition to the Central Station (Glavni kolodvor), there are in Zagreb the Western Station (Zapadni kolodvor) and the Eastern Station (Istočni kolodvor). The Western Station is that formerly called the Sava Station, and previously known as the Southern Station. Apart from these, there are a few stations exclusively for the goods traffic. A map of the Zagreb area was published in our issue of February 20, 1942, page 262.

Private Enterprise in Post-War Economic Progress.—Mr. Eric A. Johnston, President of the United States Chamber of Commerce, stated recently that the best guarantee of orderly progress in economic affairs after the war was to be found in the spirit of cordial collaboration now being manifested between the United States of America and Great Britain. In America, they were banking on an expanding economy, an increased trade with all parts of

the world, to be effected through the medium of private enterprise and measures designed to improve the standard of living of the nationals of other countries. The need for capital by those other countries would be met by the participation of Great Britain and the United States in fostering local enterprises, rather than by direct loans to foreign governments.

Restricted Traffic on East Indian Railway.—It is reported that, due to heavy floods in the vicinity of Burdwan, on the East Indian Railway, rail traffic to and from Calcutta has been restricted.

Air Service in Peru.—The Compañía de Aviación Faucett S.A. recently completed 15 years of operations by air transport in Peru. The company has carried 189,878 passengers, 3,553,271 kg. of express, 260,366 kg. of mail, and has flown 18,051,216 km. during the period from September 15, 1928, to April 30, 1943.

Control of Argentine Shipping.—The Argentine Government has taken over the control of all Argentine shipping. A Government Decree orders all ships flying the Argentine flag to be classified henceforth as public utilities, subject to regulations fixing their ports of call, types of cargo, and shipping rates. An official statement adds that this action is intended to improve the services of the merchant fleet and to cure practices by private maritime interests, which are deemed injurious to inter-American trade.

Scarborough Collision Inquiry Opened.—Major G. R. S. Wilson, Inspecting Officer, Ministry of War Transport, at York on August 18, opened his inquiry into the causes of the collision which occurred on August 10 at Scarborough Station, L.N.E.R., resulting in the deaths of four soldiers and injury to 30 others. The 9.5 a.m. passenger train from Hull, due at 10.37 a.m., was entering the station about 18 min. late when it was directed into the wrong platform line and collided with the 11.18 a.m. train for Hull, the engine of which had not backed on. The first three compartments or so of this train were telescoped. Prompt rescue efforts were made but one injured man, who died later, could not be released until 12.35

p.m. Major Wilson, before taking evidence in private, heard some by Mr. E. M. Rutter, Superintendent, North Eastern Area, and Mr. Atkinson, Chief Carriage & Wagon Inspector, York, concerning the rolling stock involved and the steps taken to summon aid and conduct the rescue work.

Crewe Airport Planned.—The Cheshire County Council has drawn up a scheme for a terminal airport at Crewe which has been submitted to the Ministry of Town & Country Planning. Under the scheme the railway station and the airport would be linked directly by a subway enabling passengers to transfer in a few minutes.

Encouraging the Use of Ticket Machines.—The use of slot ticket-machines at St. James Park Station, London Transport, has increased by 75 per cent. since lists of fares have been displayed over the banks of machines. At three other stations—Euston, Piccadilly, and Victoria—where there are similar lists, the user has risen by more than 50 per cent.

Argentine Meat for United Nations.—The Ministry of Food has completed the purchase, on behalf of the United Nations, of the exportable surplus of Argentine meat for the two years ending September 30, 1944. This covers the past season, during which shipments have been proceeding in expectation of the settlement of terms. The Ministry has made similar proposals to the Brazilian and Uruguayan Governments.

L.M.S.R. Scottish Order Application.—The London Midland & Scottish Railway Company is applying to the Secretary of State for Scotland for an Order under the Special Enactments (Extension of Time) Act, 1940, extending for a further period of three years, the time fixed by Sections 5, 6, and 7 of the L.M.S.R. Order, 1937, as extended by the L.M.S.R. Order, 1937 (Extension of Time) Order, 1940, for the completion of:—(1) the railway (Work No. 1) authorised by the Caledonian Railway Order, 1907; (2) the bridge lengthening (Work No. 1) authorised by the Caledonian Railway Order, 1910; (3) the bridge widening at Beattock authorised by the Caledonian Railway Order, 1913.



Mobile canteen provided by the London Passenger Transport Board for the road transport staffs using the Minories bus lay-by and trolley-bus terminus, near A'dgate Underground Station

Railway Stock Market

The further general slackening of business in Stock Exchange markets was attributed to the widespread disposition to await the next important phase of the war. There was again no very heavy selling, but in many directions, more particularly in industrial shares, there was a reactionary tendency after the recent strong advance. Dealers in the gilt-edged market reported more business, and the general tendency in front-rank investment securities was better. There were, however, only few movements among home railway prior charges, and some of the guaranteed and senior preference stocks showed fractional declines on balance. Sentiment tended to be influenced mainly by the set-back in home railway junior stocks which developed as a result of the decreased activity of markets generally. At the time of writing, however, the slightly lower prices are tending to attract buyers. In relation to leading industrial equity shares, home railway junior stocks have an even more undervalued appearance than was the case a few months back before industrials received widespread attention on hopeful market assumptions as to their dividend prospects in the post-war period. The latter will, however, depend on many factors which it is not possible to judge at the present time, particularly whether there is an early abolition of E.P.T. after the war. On the other hand, home rail-

way junior stocks can be considered as virtually assured of dividends at around current rates until at least one year after the war. The stock and share markets, of course, must be expected to fluctuate from time to time in accordance with views as to war news, and assumptions as to the post-war position. Nevertheless, bearing in mind the weight of money seeking investment, it seems probable that over a period the general trend of values will remain upwards as regards equity or ordinary securities of all kinds. In that event, home railway junior stocks might have good scope as regards capital appreciation, and meanwhile there is no other group of active and widely-held securities offering as attractive yields.

At the time of writing Argentine railway securities have been inclined to move against the easier trend which has developed in markets generally. This reflects the hope that the British-owned Argentine railways will be placed in a stronger position as regards obtaining just treatment from the authorities in that country to meet the problems and difficulties which have been accentuated since the war. This hope has been aroused by the recent announcement of the new move towards closer working and co-ordination indicated by the interchange of directors by four of the leading railways. Although improvement in quotations was fairly widely spread among the stocks of the Argentine railways, many of the debentures were found to be held firmly and

only in very moderate supply in the market. There appeared to be an undertone of caution as to stocks of the preference and ordinary class, the disposition being to await the results and annual statements for the financial year ended June 30.

Among home rails, Great Western ordinary at 61½ was unchanged on balance, but the 5 per cent. preference was fractionally lower at 111, as was the guaranteed stock at 123 and the 4 per cent. debentures at 108½. At the time of writing, L.M.S.R. ordinary has reacted from 32½ to 32½, the senior preference from 75½ to 75, and the 1923 preference from 62 to 61½. On the other hand, this railway's guaranteed stock was maintained at 99½, the 4 per cent. debentures at 105 and the 5 per cent. debentures at 109½. L.N.E.R. first preference moved back from 62 to 61½, the second preference from 33½ to 32½, while the first and second guaranteed eased to 97 and 89½ respectively. Southern deferred was 24½, compared with 25 a week ago; the preferred reacted from 78 to 76½. There was a further moderate reaction to 67½ in London Transport "C."

Elsewhere, B.A. Great Southern ordinary improved to 13½ and the 4 per cent. debentures to 60. B.A. Western 4 per cent. debentures were 54½ and Central Argentine 4 per cent. 49. Elsewhere, United of Havana debentures improved to 38½. French railway bonds again improved. Small movements were shown in Canadian Pacifics.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ending	Traffic for week		No. of Weeks	Aggregate traffic to date			Shares or stock	Prices								
			Total this year	Inc. or dec. compared with 1941/2		Totals		Increase or decrease		Highest 1942	Lowest 1942	Aug 20, 1943	Yield % (Notes)					
						1942/3	1941/2											
South & Central America	Antofagasta (Chili) & Bolivia	834	15.8.43	£	32,140	+	14,980	32	£	905,400	695,000	+	210,400	Ord. Stk.	14	7½	14½	Nil
	Argentine North Eastern	753	14.8.43	£	14,226	+	960	7	£	89,124	89,328	—	204	"	6½	3	7	Nil
	Bolivar	174	July, 1943	£	4,991	+	1,021	31	£	37,405	31,401	+	6,004	6 p.c. Deb.	19½	10	20½	Nil
	Brazil	—	—	—	—	—	—	—	—	—	—	—	—	Bonds	20½	9	20½	Nil
	Buenos Ayres & Pacific	2,807	14.8.43	£	75,600	—	4,500	7	£	510,000	553,320	—	43,320	Ord. Stk.	7½	4	6	Nil
	Buenos Ayres Great Southern	5,080	14.8.43	£	131,400	—	120	7	£	866,700	817,800	+	48,900	Ord. Stk.	12½	7½	13½	Nil
	Buenos Ayres Western	1,930	14.8.43	£	51,720	+	2,760	7	£	294,420	314,280	—	19,860	"	12½	6	12½	Nil
	Central Argentine	3,700	14.8.43	£	126,468	+	6,870	7	£	769,440	801,042	—	31,602	"	9½	4½	9½	Nil
	Do.	—	—	—	—	—	—	—	—	—	—	—	—	Dfd.	3½	2½	4	Nil
	Cent. Uruguay of M. Video	972	14.8.43	£	28,815	+	10,748	7	£	193,554	134,934	+	58,630	Ord. Stk.	8	4	5½	Nil
	Costa Rica	262	July, 1943	£	23,251	+	10,490	4	£	23,251	12,761	+	10,490	Ord. Stk.	16½	11	14	Nil
	Dorada	70	July, 1943	£	26,425	+	9,165	28	£	146,917	98,475	+	48,442	1 Mt. Db.	90½	89	94½	6½
	Entre Rios	808	14.8.43	£	19,032	+	1,098	7	£	122,862	112,896	+	9,966	Ord. Stk.	33	4½	7	Nil
	Great Western of Brazil	1,030	14.8.43	£	13,600	+	4,400	32	£	499,000	325,200	+	173,800	Ord. Sh.	9½	9½	40½	Nil
	International of Cl. Amer.	794	June, 1943	£	\$591,995	+	\$62,010	24	£	\$3,904,639	\$3,689,137	+	\$215,502	"	—	—	—	Nil
	Inter-oceanic of Mexico	223	July, 1943	£	7,550	+	600	30	£	61,140	44,940	+	16,200	1st Pref.	1½	5/3	1½	Nil
	La Guaira & Caracas	1,918	14.8.43	£	37,524	+	5,827	32	£	1,092,161	972,888	+	119,273	Ord. Stk.	6½	2½	5½	Nil
	Leopoldina	483	14.8.43	£	ps. 387,800	+	ps. 123,500	6	£	ps. 2,544,900	ps. 1,991,400	+	ps. 553,500	Ord. Stk.	1	1	1½	Nil
	Mexican	319	June, 1943	£	15,163	+	300	32	£	184,706	167,328	+	17,378	"	—	—	—	Nil
	Midland Uruguay	382	15.8.43	£	6,972	+	997	31	£	93,250	115,541	—	22,291	Ord. Sh.	77½	3½	77½	Nil
Nitrate	274	13.8.43	£	\$5,786,000	+	\$1,667,000	7	£	\$34,222,000	\$25,391,000	+	\$8,831,000	Pr. Lt. Stk.	53	40	72½	Nil	
Paraguay Central	1,059	June, 1943	£	104,734	+	22,552	52	£	1,045,065	915,630	+	129,435	"	19½	5½	15	Nil	
Peruvian Corporation	100	June, 1943	£	c 106,000	+	c 60,000	50	£	c 1,243,000	c 1,005,172	+	c 237,828	Ord. Stk.	59	41	59	Nil	
Salvador	153½	8.8.43	£	52,675	+	12,579	31	£	1,306,255	1,160,679	+	145,576	Ord. Stk.	59	41½	59	Nil	
San Paulo	160	July, 1943	£	3,515	—	2,975	33	£	52,326	62,000	—	9,674	Ord. Sh.	41½	23½	30½	Nil	
Taita	1,301	14.8.43	£	51,620	—	5,347	7	£	326,254	279,086	+	47,168	Ord. Stk.	8½	2½	5½	Nil	
Uruguay Northern	73	June, 1943	£	1,438	+	399	52	£	17,255	14,305	+	2,950	"	—	—	—	Nil	
Canada	Canadian Pacific	17,034	14.8.43	£	1,184,230	+	206,200	32	£	34,891,400	30,537,000	+	4,354,400	Ord. Stk.	16½	9½	16	Nil
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Nil
India	Barsi Light	202	31.7.43	£	28,695	+	5,010	17	£	91,770	63,285	+	28,485	"	—	—	—	Nil
	Bengal & North Western	2,090	Nov., 1942	£	264,975	+	33,087	8	£	449,400	561,082	—	111,682	"	—	—	—	Nil
	Bengal-Nagpur	3,267	Feb., 1943	£	932,775	+	84,975	46	£	10,031,400	9,111,000	+	920,400	Ord. Stk.	102½	88	102½	Nil
	Madras & Southern Mahratta	2,939	20.5.43	£	268,500	+	56,293	7	£	1,402,950	1,113,027	+	289,923	"	105½	87	107½	Nil
	Rohilkund & Kumaon	571	Nov., 1942	£	555,750	+	5,072	8	£	115,950	99,909	+	16,041	"	103½	88½	103½	Nil
South Indian	2,349	20.5.43	£	189,379	+	5,937	6	£	975,109	890,602	+	84,507	"	103½	88½	103½	Nil	
Various	Egyptian Delta	—	10.6.43	£	13,955	+	52,968	10	£	98,431	75,685	+	19,746	Prf. Sh.	5½	1½	2½	Nil
	Manila	—	—	—	—	—	—	—	—	—	—	—	—	B. Deb.	44	35	37½	Nil
	Midland of W. Australia	277	30.6.1943	£	37,349	+	12,545	52	£	392,864	254,759	+	38,105	Inc. Deb.	95	90	100	Nil
	Nigerian	1,900	29.5.43	£	64,646	+	14,837	7	£	576,788	453,619	+	123,169	"	—	—	—	Nil
	South Africa	13,291	17.7.43	£	913,075	+	66,738	15	£	13,113,446	11,863,678	+	1,249,768	"	—	—	—	Nil
	Victoria	4,774	Jan., 1943	£	1,480,058	+	169,521	15	£	—	—	—	—	"	—	—	—	Nil

Note. Yields are based on the approximate current prices and are within a fraction of ½.
† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffic is given in sterling calculated @ 16½ pesos to the £
§ ex dividend